

Chapter 7.0 Hazardous Air Pollutants

7.1 WHAT INFORMATION IS PRESENTED IN THIS CHAPTER?

This chapter discusses hazardous air pollutants (HAPs). HAPs are commonly referred to as “air toxics” or “toxic air pollutants.” They are pollutants known to cause or suspected of causing cancer or other serious human health effects or ecosystem damage. Section 112 of the Clean Air Act (CAA) now lists 188 pollutants or chemical groups as HAPs and targets stationary sources of these pollutants for regulation.¹ Examples of air toxics include heavy metals like mercury and chromium; organic chemicals like benzene, 1,3-butadiene, perchloroethylene, dioxins, and polycyclic organic matter.

HAPs are emitted from literally thousands of sources including: point sources (such as electric power utilities or industrial manufacturers), smaller area sources (such as neighborhood dry cleaners or service stations), and mobile sources (such as automobiles or airplanes). Adverse effects to human health and the environment due to HAPs can result from exposure to air toxics from individual facilities, exposure to mixtures of pollutants found in urban settings, or exposure to pollutants emitted from distant sources that are transported through the atmosphere over regional, national or even global airsheds. In addition to breathing air contaminated with air toxics, people can also be exposed to some HAPs through other pathways such as through the ingestion of contaminated food from waters polluted from the deposition of HAPs from the air to water bodies (e.g. fish contaminated with mercury).

7.2 WHAT ARE THE HEALTH AND ENVIRONMENTAL EFFECTS OF HAPs?

Most of the information on potential health effects of HAPs is derived from experimental animal data and studies of exposed workers. The different health effects which may be caused by HAPs include cancer, neurological, cardiovascular, and respiratory effects, effects on the liver, kidney, immune system, and reproductive system, and effects on fetal and child development. More than half of the 188 HAPs have been classified by the United States (U.S.) (EPA) as “known,” “probable,” or “possible” human carcinogens. Known human carcinogens are those that have been

demonstrated to cause cancer in humans. Probable and possible human carcinogens include chemicals that we are less certain cause cancer in people, yet for which laboratory animal testing or limited human data indicates carcinogenic effects.

Some HAPs pose particular hazards to people of a certain age or stage in life (e.g., young children, adolescents, adults, or elderly people). Available data suggest that about a third of HAPs (e.g., mercury) may be developmental or reproductive toxicants in humans. This means that exposure during the development of a fetus or young child may prevent normal development into a healthy adult. Other such critical exposures may affect the ability to conceive or give birth to a healthy child. Toxic air pollutants can have a variety of environmental impacts in addition to the threats they pose to human health. Animals, like humans, may experience health problems if they breathe sufficient concentrations of HAPs over time, or ingest HAPs through contaminated food (e.g. fish).

7.3 WHY ARE AIR TOXICS INVENTORIES NEEDED?

Section 112 of the CAA added a new approach to the regulation of HAPs, consisting of two phases. The first requires the development of technology-based emissions standards for sources emitting the 188 HAPs. The second phase requires the evaluation of any remaining problems or risks, and development of additional regulations to address sources of those problems, as needed. In implementing the Section 112 provisions, EPA has collected information that helps characterize air toxics emissions. Emission inventories are a key component of this characterization process and also provide important information with which to monitor progress towards meeting the emission reduction goals.

7.3.1 Which EPA Regulatory Activities Use HAP Emission Inventories?

Phase One:

Under Section 112 of the CAA, the first phase of requirements is comprised of the technology-based standards, known as maximum achievable control technology (MACT) and generally achievable control technology (GACT)

regulations. All large stationary sources, or “major” sources, of the 188 HAPs must be addressed by such regulations, as well as the smaller, “area” stationary sources found to produce significant risk or emit priority pollutants such as those identified under Section 112(c)(6) or the Integrated Urban Air Toxics Strategy described below. Some combustion sources, such as municipal waste combustors, and medical waste incinerators are regulated under equivalent requirements in Section 129. The purpose of this technology-based approach is to use available control technologies, changes in work practices, or pollution prevention methods to get emission reductions for as many of the HAPs as possible. It is expected that the MACT and GACT standards will reduce a majority of the HAP emissions and, in turn, reduce risks from regulated sources. This initial phase has generated emissions data for several industries as they are studied in the MACT and GACT regulatory development process as well as other CAA provisions that require EPA to evaluate emissions of utility industry HAP emissions, mercury, and other specific air toxics. These requirements are summarized below.

Utility Study, Section 112(n)(1)(A) requires a report to Congress on the “hazards to public health reasonably anticipated to occur as a result of the emissions of electric utility steam generating units.”

Mercury Study, Section 112(n)(1)(B) requires a report to Congress regarding emissions of mercury that “shall consider the rate and mass of such emissions, the health and environmental effects of such emissions...”

Specific Pollutants, Section 112(c)(6) requires a “list of categories and subcategories of sources assuring that sources accounting for not less than 90 percent of the aggregate emissions of each pollutant are subject to standards.” This provision applies to seven specific HAPs: alkylated lead (Pb) compounds, mercury, dioxins, polycyclic organic matter (POM), hexachlorobenzene, polychlorinated biphenyls (PCBs) and furans.

Area Source Program, Section 112(c)(3) requires that the “emissions of the 30 hazardous air pollutants that present the greatest threat to public health in the largest number of urban areas are subject to regulation.”

Implementation of Section 112 through Title V of the CAA requires the Administrator to perform an oversight role with respect to State issued permits, including permits issued to major sources of HAP emissions. In order to determine whether that program is being appropriately and lawfully administrated by the States with respect to major HAP sources, a HAP emission inventory is necessary. States are developing programs to regulate HAPs and their Title V programs must

include permits for all HAP sources emitting major quantities of HAPs (10 tons of one HAP or 25 tons of multiple HAPs per year). Thus the Administrator believes maintaining an inventory of such sources is necessary and appropriate.

Phase Two:

After application of these technology-based standards and studies, in the second phase, the CAA requires strategies and programs for evaluating remaining risks and effects and ensuring that the overall program has achieved sufficient improvement. This phase will be implemented through programs that evaluate these remaining risk and effects. Such programs are described below.

Integrated Urban Air Toxics Strategy responds to the requirements of Sections 112(k) and 112(c)(3) of the CAA, and also reflects activities to control mobile source emissions required under section 202(l). The goals of the Integrated Urban Air Toxics Strategy consist of the following: 1) attain a 75-percent reduction in incidence of cancer attributable to exposure to HAPs emitted by stationary sources; 2) attain a substantial reduction in public health risks posed by HAP emissions from area sources; and 3) address disproportionate impacts of air toxics hazards across urban areas. The Integrated Urban Air Toxics Strategy was finalized in July 19, 1999 *Federal Register*.²

Residual Risk, Section 112(f) requires an assessment of the residual risk after certain Section 112 standards are implemented. Residual risk standards are to be developed as determined necessary eight years after promulgation of these standards.

The Great Waters Program, Section 112(m) requires EPA to identify “the extent of atmospheric deposition of hazardous air pollutants” to specified water bodies, “evaluate any adverse effects to public health or the environment caused by such deposition,” and determine whether additional regulations are warranted.

Inventories play a crucial role in each of these programs as the inventory information is used to evaluate current emissions, emissions reductions achieved, and identify the numerous source categories which emit specific pollutants. Inventories are an important tool in evaluating the risk reductions goals for the Integrated Urban Air Toxics Strategy. In addition, EPA is also using information from inventories to plan what future work might need to be done. For more information on Section 112 programs refer to the EPA’s website at <http://www.epa.gov/ttn/uatw.html>.

7.4 WHAT IS EPA'S PLAN TO GATHER THE NECESSARY TOXICS DATA?

As the EPA began working to meet the air toxics requirements of the CAA, it became clear that there was a strong need for a central source of air toxics emissions and inventory data from which to conduct the analyses required by the CAA, and to have a place to centrally store and share the data being generated through various programs. The increased availability of air toxics emissions data will assist EPA program offices and other agencies that use emissions data to evaluate state, local, or tribal air pollution related issues. Air toxics data needs vary from national estimates of emissions to regional estimates, county-level estimates, and facility-specific estimates, and even down to process-specific estimates. Thus, in 1993, EPA began development of a national air toxics inventory data base now referred to as the National Toxics Inventory (NTI).

7.5 WHAT IS THE NTI?

The NTI is a central repository of estimated emissions for the 188 HAPs for all anthropogenic (manmade) sources.

7.5.1 How was the NTI Developed?

The national estimates of the HAPs included in the NTI to date were calculated using existing information; no source testing or industry surveys were conducted specifically for the purposes of generating the NTI. Existing emission inventory data were obtained from a variety of state and local data bases and EPA programs (such as the Toxics Release Inventory (TRI), standards development programs, and other studies required by the CAA such as the Utility Study). Sometimes emissions information is available from direct measurement of emissions at a given source. However, for logistical and financial reasons direct measurement, or stack testing, cannot be performed at every source and instead, most inventory data are developed via various estimation techniques.

Many of the national emissions estimates in the NTI (primarily for area and mobile sources) were developed by applying an emission factor, which is an emissions estimate based on test data and correlated to some other process activity. For example an emissions factor could be expressed in terms of grams emitted per ton of coal burned or per vehicle mile traveled. To estimate emissions, these factors were combined with information about the activity levels of a source, such as the production levels at the facility, the number of hours of operation, or the amount of fuel consumed.

Because there are multiple programs investigating HAP emissions in the United States, emissions data and source activity data are continually changing and improving. Since

estimating emissions requires making various assumptions, the estimates are applicable for a specific time period and may not necessarily agree with other published estimates due to differences in base years, emission factors and activity data, and calculation assumptions. It should be recognized that some of the data presented in the NTI for a given base year is likely to change as more information and improved estimation approaches are developed.

EPA established a hierarchy of emissions estimation methods in order to prepare the inventory. The hierarchy is used to sort through overlapping data sources of varying quality or reliability. EPA prefers to use existing inventories that are final, and whose estimates are judged to be acceptable.

The hierarchy is (with data sources listed by preference):

1. Data developed by State and local air agencies;
2. Data from EPA's Emissions Standards Division, collected and developed for standards development;
3. Data from existing EPA inventories, such as those developed to support requirements of CAA Sections 112(k)⁴ and 112(c)(6);⁵ and
4. Emissions reported in the TRI data base,⁶ and emissions that EPA generated using emission factors and activity factors.

If emissions data were not available for certain source categories through these references (1 - 4 above), emissions factors and activity data were used to estimate emissions. Emission factors used were evaluated for their currency, completeness, representativeness, and overall quality. The emission factors generally came from EPA's AP-42 document,⁷ EPA's Locating and Estimating Document Series,⁸ or the Factor Information Retrieval (FIRE) system.⁹ Most of the activity data were obtained from sources such as the Energy Information Administration (fuel consumption reports), the Forest Service (fires and burned acreage), and other EPA offices (waste disposal reports). Industry trade publications, commercially published business directories, and journals were also sources of activity data.

The EPA's Office of Transportation and Air Quality (OTAQ) assisted in the development of the mobile source emissions estimates. Mobile sources include "on-road" vehicles, such as cars, trucks, and motorcycles, as well as "nonroad" vehicles and equipment, such as airplanes, boats, or lawnmowers. For many of the HAPs emitted from mobile sources, details on the emission estimation procedures are provided in the Section 112(k) inventory report.³

7.5.2 What are the NTI Base Years?

The Baseline NTI (1990 - 1993)

The first iteration of the NTI, referred to as the Baseline NTI, provides a composite of emissions estimates intended to represent the 1990 to 1993 time frame. Much of the baseline NTI data are for 1990, because a large portion of the national emissions data in the NTI was developed under the Section 112(c)(6) and Section 112(k) programs which targeted a 1990 base year. The TRI data and state and local data included for California, Houston, and Phoenix are for a 1993 base year. Emissions for the MACT source category portion of the NTI are annual emissions ranging from 1990 to 1993, and represent emissions from these sources before MACT standards were implemented. The estimates in the Baseline inventory are aggregated to the county level and cover the 50 United States. The emissions summaries and graphics provided in this report are based exclusively on the Baseline NTI.

The 1996 NTI

EPA has recently completed the 1996 NTI. The 1996 version differs significantly from the Baseline NTI. Unlike the Baseline NTI which has emissions estimates from all counties by source category and pollutant, the 1996 NTI contains facility- and location-specific information making it suitable for input to computer air quality models (computer models used to for dispersion calculations which predict resultant ambient air concentrations). Methods for mobile source emissions estimates were significantly improved in the 1996 NTI also. The 1996 NTI data set contains estimates for all 50 United States and for Puerto Rico and the Virgin Islands. It has been compiled in cooperation with State and local agencies which have submitted data they have gathered during facility permitting and other regulatory activities. The 1996 NTI contains data and/or comments supplied by 46 States, Puerto Rico, and the Virgin Islands. Figure 7-1 highlights the state and local agencies that contributed data to the 1996 NTI. Subsequent base year NTIs will contain this same level of model-ready detail and will be compiled every 3 years (1999, 2002, etc.).

The 1996 NTI was completed in January 2000, but the results could not be summarized for comparison to Baseline NTI emissions in time to be printed in this document. Thus, because only one data set is summarized here, this report does not show an emissions trend over time. Instead, it provides the baseline from which trends can be measured in future reports.

7.5.3 How are Emissions Allocated to Source Types and Counties?

For purposes of the Baseline NTI, the emission estimates were further refined in two ways. First, the emissions were allocated by source type including major sources, area sources and mobile sources. Then the emissions were spatially allocated. The sections below describe these analyses.

Major/Area Source Allocation

The national emission estimates for stationary source categories were allocated according to whether the emitting source category was classified as "major," "area," or could be classified partially as both. According to Title I, Section 112(a) of the CAA, a "major source" is any stationary source (including all emission points and units located within a contiguous area and under common control) of air pollution that has the potential to emit, considering controls, 10 tons or more per year of any HAP or 25 tons or more per year of any combination of HAPs. An "area source" is any stationary source of HAPs that does not qualify as a major source. Major sources may include co-located sources which can have components that emit less than 10 tons per year of an individual HAP or 25 tons or more per year of any combination of HAP.

Spatial Allocation

Emissions were assigned to counties by a number of methods. In some cases, where actual locations were not known, emissions were assigned to individual counties using surrogate approaches. Some examples of surrogate approaches include proportioning national emissions to counties based on population, proportioning emissions from some industrial sectors to counties based on 1990 Standard Industrial Classification (SIC) code employment estimates, and assigning emissions from forest fires to counties based on forested acres.

7.5.4 What are Urban/Rural Allocations?

The emission estimates were also spatially allocated on an urban and rural basis in order to meet some of the requirements of the Integrated Urban Air Toxics Strategy. To do this, U.S. Census Bureau statistical data were used.⁹ The Census Bureau has designated the portion of every county in the United States that is considered urban. The criteria used include population density and total population. Using population data and urban designations, every county in the United States was classified as one of the following categories:

- Urban-1 (U1) counties are included in a metropolitan statistical area with a population greater than 250,000;
- Urban-2 (U2) counties in which the Census Bureau designates more than 50 percent of the county population as urban; and
- Rural (R) counties in which the Census Bureau designates less than 50 percent of the county population as urban.

In the summary of 1993 NTI emissions and graphics that follow, “urban” has been designated to be the sum of U1 plus U2 counties. Figure 7-2 identifies the urban/rural counties in the 50 United States using the Integrated Urban Air Toxics Strategy definition described above. Note that these urban/rural designations have been derived exclusively for inventory purposes and do not indicate regulatory applicability.

7.5.5 What Changes Have Been Made Since the Last Trends Report?

Emission inventories are dynamic, with enhancements being made on an ongoing basis. Many revisions were made in the Baseline NTI since what was reported in the last Trends document. Public review of the compilation of the Section 112(k) Urban Air Toxics inventory and new information that became available through the MACT/GACT program led to most of these changes. Some errors in the earlier data base were also corrected. These changes led to a significant decrease in the estimates of emissions from stationary sources.

7.6 HOW ARE THE EMISSIONS SUMMARIZED?

The emissions summarized in the following pages represents the most recent version of the Baseline NTI. (This version is the “9901” version of the inventory and, as stated previously, represents a composite of emissions estimates from the 1990 to 1993 time period.) Because of the volume of data, much of the emissions information shown here involves the summary of emissions across pollutants. This cross-pollutant summary is done primarily for the sake of comparison to show the mass of all HAP emissions across source sectors (major, area, mobile), tier groups (industry sectors), populations centers (urban and rural), and geographic regions (national and state).

Any evaluation of exposure or resultant risk posed by these emissions would depend on the presence, exposure, and toxicity of individual pollutants, and cannot be surmised from the data provided here.

The sum of Baseline NTI emissions from all sources and from the 50 United States is 5.9 million tons. This version

(9901) of the NTI includes emission estimates for 169 of the 188 individual and group (e.g., metal compound groups) HAPs. A list of the HAPs included is presented in Table 7-1. Approximately 580,000 tons of HAP emissions that could not be speciated into individual chemical species. These “unspeciated HAP” emissions come primarily from the synthetic organic chemicals industry MACT data. These emissions are primarily volatile organic compounds. A small subset (approximately 64 tons) of these emissions are metals and other particulate matter. It should be noted that this will add Pb to the undercounting of individual HAP species from these sources, for example, benzene emissions. The Baseline NTI includes estimates for approximately 960 source categories.

7.6.1 What Individual Pollutant Detail is Given?

As part of the Integrated Urban Air Toxics Strategy, EPA identified a list of the 33 air toxics that present the greatest threat to public health in the largest number of urban areas (see Table 7-2 for list of urban air toxics). In identifying the list of “urban air toxics” pollutants EPA looked at pollutants regardless of the source sector (major, area, or mobile), from which they were emitted. Thus, EPA looked at pollutants that pose a health threat in urban areas in the aggregate, from stationary area, stationary major and mobile sources. However, the CAA requires that EPA identify at least 30 HAPs that “result from area sources.” Thus, of these 33 urban air toxics, EPA identified the 30 with the greatest contribution from smaller commercial and industrial operations or so-called “area” sources. These 30 are important for establishing a list of area source categories for regulation as required by section 112(k). However, in addition to the requirement to list area source categories, the Integrated Urban Air Toxics Strategy contains the three risk reduction goals discussed earlier. It is important to remember that in looking at the risk reduction goals the Integrated Urban Air Toxics Strategy states EPA will look at the risk from all 188 HAPs, not just those associated with the 33 urban air toxics. The 33 urban air toxics represent those pollutants that are a priority on a national scale. However, on the local scale other HAPs may play a more important role in local health risks. The emissions data that follows highlights the emissions of these 33 priority HAPs in comparison to all of the 188 HAPs. For additional background information on the Integrated Urban Air Toxics Strategy, visit EPA’s website at <http://www.epa.gov/ttn/uatw/urban/urbanpg.html>.

As explained previously, because the Integrated Urban Air Toxics Strategy is designed to focus on emissions from urban areas, all emissions in the NTI are flagged accordingly to indicate whether the county from which the emissions come meets the urban definition. Figures 7-3 through Figure 7-5 indicate the percentages of national emissions totals that are from rural and urban counties and attributable to the

major, area, on-road, and nonroad source sectors. Figures 7-6 and 7-7 show the summed emissions of the 188 HAPs and 33 HAPs, respectively, by state and source sector. Figures 7-8 and 7-9 present a map graphic portraying the percentiles of the summed emissions densities in tons per square mile. Figure 7-10 shows national emissions percentage of each of the 33 HAPs divided among source sectors (major, area, on-road, nonroad).

The Baseline NTI emissions are further summarized in several ways. Table 7-3 includes all 188 HAPs summed by total, urban, and rural allocations and by point, area, and mobile (on-road and nonroad) contributions. Table 7-4 repeats this information with more detail about how the point, area, and mobile sectors exist in urban and rural counties. Tables 7-5 and 7-6 indicate the summed 188 and 33 HAPs, respectively, by State and point, area, on-road, and nonroad emissions. Tables 7-7 and 7-8 summarize the 33 HAPs by source tier groups. Tiering is a method of broadly categorizing industry sectors. Tier 1 provides the most general classification (e.g., fuel combustion) with Tier 2 supplying more detail (e.g., fuel combustion by coal, oil, gas, and other fuel types). Although currently criteria pollutant and HAP emission inventories are compiled separately, and therefore the Tier groups could not be matched exactly, every

effort has been made to match Tier groups as much as possible. Table 7-7 indicates Tier 1 groups and Table 7-8, Tier 1 along with Tier 2.

Within the Tier 2 groupings, emissions in the NTI are flagged according to whether they come from source categories being reviewed for MACT/GACT regulations. The MACT source emissions that are flagged in the Baseline NTI data set reflect source categories for which EPA has developed emissions estimates as part of ongoing regulatory development. Although utility emissions have a "MACT flag," no determination has been made as yet regarding whether these sources will be subject to MACT standards. Combustion sources being reviewed under section 129 are also flagged. The source categories and pollutants that are MACT flagged indicate those considered in the Integrated Urban Strategy analyses (used to determine the list of priority HAPs) prior to publication of the Strategy. That analysis resulted in an additional listing of source categories, published in the July 19, 1999 *Federal Register*.² These newly listed source categories do not yet have MACT flags in the NTI; once standards have been initiated to the point that emissions covered by new standards can be identified, the inventory will reflect them.

7.7 REFERENCES

1. This list originally included 189 chemicals. The CAA allows EPA to modify this list if new scientific information becomes available that indicates a change should be made. Using this authority, the Agency modified the list to remove caprolactam in 1996, reducing the list to 188 pollutants (Hazardous Air Pollutant List; Modification, 61 FR 30816, June 18, 1996).
2. "National Air Toxics Program: The Integrated Urban Strategy;" Notice, *Federal Register* 64:38705, U.S. Environmental Protection Agency. July 19, 1999.
3. "EPA Strategic Plan," EPA-190/R-97-002, Office of the Chief Financial Officer, U.S. Environmental Protection Agency, U.S. Government Printing Office, Washington, DC. 1997.
4. "1990 Emissions Inventory of Forty Potential Section 112(k) Pollutants," Supporting Data for EPA's Section 112(k) Regulatory Strategy, Final Report, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency. Research Triangle Park, NC. 1999.
5. "1990 Emissions Inventory of Section 112(c)(6) Pollutants: Polycyclic Organic Matter (POM), 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)/2,3,7,8-Tetrachlorodibenzofuran (TCDF), Polychlorinated Biphenyl Compounds (PCBs), Hexachlorobenzene, Mercury, and Alkylated Lead," Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC. 1999.
6. "Toxics Release Inventory 1987-1995 CD ROM," EPA 749-C-96-003, U.S. Environmental Protection Agency, Research Triangle Park, NC. 1996a.
7. "Compilation of Air Pollutant Emission Factors, Fifth Edition and Supplements," AP-42, Volume I: Stationary Point and Area Sources, U.S. Environmental Protection Agency, Research Triangle Park, NC. 1996.
8. "Air Chief Compact Disc," Version 7, EPA 454/C-99-004, U.S. Environmental Protection Agency, Research Triangle Park, NC. November 1999.
9. "Factor Information Retrieval (FIRE) System Database," Version 5.1a, U.S. Environmental Protection Agency, Research Triangle Park, NC. 1995.
10. "1990 Summary Tape File 1A, 1990 Decennial Census of Population and Housing," U.S. Census Bureau, Washington, DC. 1990.

Table 7-1. Hazardous Air Pollutants Included in the Baseline NTI (version 9901)

1,1,2,2-Tetrachloroethane	Acrylamide
1,1,2-Trichloroethane	Acrylic acid
1,1-Dimethylhydrazine	Acrylonitrile
1,2,4-Trichlorobenzene	Allyl chloride
1,2-Dibromo-3-chloropropane	Aniline
1,2-Epoxybutane	Antimony Compounds
1,2-Propylenimine (2-Methylaziridine)	Arsenic Compounds(inorganic including arsine)
1,3-Butadiene	Asbestos
1,3-Dichloropropene	Benzene (including benzene from gasoline)
1,3-Propane sultone	Benzidine
1,4-Dichlorobenzene	Benzotrichloride
1,4-Dioxane (1,4-Diethyleneoxide)	Benzyl chloride
2,2,4-Trimethylpentane	Beryllium Compounds
2,3,7,8-TCDD TEQ	Biphenyl
2,4,5-Trichlorophenol	Bis(2-ethylhexyl)phthalate (DEHP)
2,4,6-Trichlorophenol	Bis(chloromethyl) ether
2,4-D (2,4-Dichlorophenoxyacetic Acid)(including salts and esters)	Bromoform
2,4-Dinitrophenol	Cadmium Compounds
2,4-Dinitrotoluene	Calcium cyanamide
2,4-Toluene diisocyanate	Captan
2-Chloroacetophenone	Carbaryl
2-Nitropropane	Carbon disulfide
3,3'-Dichlorobenzidene	Carbon tetrachloride
3,3'-Dimethoxybenzidine	Carbonyl sulfide
3,3'-Dimethylbenzidine	Catechol
4,4'-Methylenebis(2-chloroaniline)	Chlordane
4,4'-Methylenedianiline	Chlorine
4,4'-Methylenediphenyl diisocyanate (MDI)	Chloroacetic acid
4,6-Dinitro-o-cresol (including salts)	Chlorobenzene
4-Aminobiphenyl	Chlorobenzilate
4-Dimethylaminoazobenzene	Chloroform
4-Nitrobiphenyl	Chloromethyl methyl ether
4-Nitrophenol	Chloroprene
Acetaldehyde	Chromium Compounds
Acetamide	Cobalt Compounds
Acetonitrile	Coke Oven Emissions
Acetophenone	Cresol/Cresylic acid (mixed isomers)
Acrolein	Cumene

Table 7-1 (continued)

Cyanide Compounds	Methoxychlor
Dibutyl phthalate	Methyl bromide (Bromomethane)
Dichloroethyl ether (Bis[2-chloroethyl]ether)	Methyl chloride (Chloromethane)
Dichlorvos	Methyl chloroform (1,1,1-Trichloroethane)
Diethanolamine	Methyl ethyl ketone (2-Butanone)
Diethyl sulfate	Methyl iodide (Iodomethane)
Dimethyl phthalate	Methyl isobutyl ketone (Hexone)
Dimethyl sulfate	Methyl isocyanate
Epichlorohydrin (l-Chloro-2,3-epoxypropane)	Methyl methacrylate
Ethyl Chloride	Methyl tert-butyl ether
Ethyl acrylate	Methylene chloride (Dichloromethane)
Ethyl carbamate (Urethane) chloride (Chloroethane)	Methylhydrazine
Ethylbenzene	N,N-Dimethylaniline
Ethylene dibromide (Dibromoethane)	N,N-Dimethylformamide
Ethylene dichloride (1,2-Dichloroethane)	N-Nitrosodimethylamine
Ethylene glycol	N-Nitrosomorpholine
Ethylene oxide	Nickel Compounds
Ethylene thiourea	Nitrobenzene
Ethyldene dichloride (1,1-Dichloroethane)	Parathion
Fine mineral fibers	Pentachloronitrobenzene (Quintobenzene)
Formaldehyde	Pentachlorophenol
Glycol ethers	Phenol
Heptachlor	Phosgene
Hexachlorobenzene	Phosphine
Hexachlorobutadiene	Phosphorus Compounds
Hexachlorocyclopentadiene	Phthalic anhydride
Hexachloroethane	Polychlorinated biphenyls (Aroclors)
Hexamethylene diisocyanate	Polycyclic Organic Matter
Hexane	Propionaldehyde
Hydrazine	Propoxur (Baygon)
Hydrochloric acid (Hydrogen chloride [gas only])	Propylene dichloride (1,2-Dichloropropane)
Hydrogen fluoride (Hydrofluoric acid)	Propylene oxide
Hydroquinone	Quinoline
Isophorone	Quinone (p-Benzoquinone)
Lead Compounds	Radionuclides (including radon)
Maleic anhydride	Selenium Compounds
Manganese Compounds	Styrene
Mercury Compounds	Styrene oxide

Table 7-1 (continued)

Methanol	Tetrachloroethylene (Perchloroethylene)
Titanium tetrachloride	Vinyl acetate
Toluene	Vinyl bromide
Total Unspeciated HAPS	Vinyl chloride
Total Unspeciated METALS	Vinylidene chloride (1,1-Dichloroethylene)
Trichloroethylene	Xylenes (mixed isomers)
Triethylamine	o-Anisidine
Trifluralin	o-Toluidine
Unspeciated Particulate HAPs, Chromium and Cobalt	p-Phenylenediamine

**Table 7-2. List of Urban HAPS for the Integrated Urban Air Toxics Strategy
("Urban HAPS List")**

HAP	CAS No. ⁺	HAP	CAS No. ⁺
acetaldehyde	75070	formaldehyde	50000
acrolein	107028	hexachlorobenzene	118741
acrylonitrile	107131	hydrazine	302012
arsenic compounds		lead compounds	
benzene	71432	manganese compounds	
beryllium compounds		mercury compounds	
1,3-butadiene	106990	methylene chloride (dichloromethane)	75092
cadmium compounds		nickel compounds	
carbon tetrachloride	56235	polychlorinated biphenyls (PCBs)	1336363
chloroform	67663	polycyclic organic matter (POM)	
chromium compounds		quinoline	91225
coke oven emissions	8007452	2,3,7,8-tetrachlorodibenzo-p-dioxin (& congeners & TCDF congeners)	1746016
1,2-dibromoethane	106934	1,1,2,2-tetrachloroethane	79345
1,2-dichloropropane (propylene dichloride)	78875	tetrachloroethylene (perchloroethylene)	127184
1,3-dichloropropene	542756	trichloroethylene	79016
ethylene dichloride (1,2-dichloroethane)	107062	vinyl chloride	75014
ethylene oxide	75218		

⁺ Chemical Abstracts System number.

Table 7-3. Baseline NTI Emissions for Urban, Rural, and Major Source Categories by HAP

188 HAP Name	Total National Emissions (tpy)	Total URBAN	Total RURAL	Total Point	Total Area	Mobile: Onroad	Mobile: Nonroad
1,1,2,2-Tetrachloroethane	248.56834	209.64691	38.92143	50.21984	198.34850	0.00000	0.00000
1,1,2-Trichloroethane	761.36164	511.34897	250.01267	754.41778	6.94386	0.00000	0.00000
1,1-Dimethylhydrazine	0.58484	0.57639	0.00845	0.58313	0.00170	0.00000	0.00000
1,2,4-Trichlorobenzene	5,865.94500	3,072.21190	2,793.73310	5,849.83966	16.10534	0.00000	0.00000
1,2-Dibromo-3-chloropropane	14.93700	11.17880	3.75820	14.78763	0.14937	0.00000	0.00000
1,2-Epoxybutane	38.05489	37.15589	0.89900	36.61370	1.44120	0.00000	0.00000
1,2-Propylenimine (2-Methylaziridine)	0.41950	0.40444	0.01506	0.41043	0.00907	0.00000	0.00000
1,3-Butadiene	71,523.56768	42,590.06162	28,933.50606	3,937.92968	20,040.53479	36,657.97824	10,887.12496
1,3-Dichloropropene	19,927.87000	16,652.12824	3,275.74176	30.48629	19,897.38371	0.00000	0.00000
1,3-Propane sultone	0.00072	0.00072	0.00000	0.00072	0.00000	0.00000	0.00000
1,4-Dichlorobenzene	5,225.64801	4,228.57842	997.06959	750.16231	4,475.48569	0.00000	0.00000
1,4-Dioxane (1,4-Diethyleneoxide)	855.24718	716.54579	138.70139	832.48441	22.76276	0.00000	0.00000
2,2,4-Trimethylpentane	29,627.36202	25,490.36625	4,136.99577	23,821.53979	5,803.52238	1.81653	0.48333
2,3,7,8-TCDD TEQ	0.00264	0.00221	0.00043	0.00170	0.00084	0.00009	0.00000
2,4,5-Trichlorophenol	0.52300	0.39141	0.13159	0.51777	0.00523	0.00000	0.00000
2,4,6-Trichlorophenol	0.59785	0.46601	0.13184	0.59017	0.00768	0.00000	0.00000
2,4-D (2,4-Dichlorophenoxyacetic Acid)(including salts and esters)	7,681.23909	2,503.84525	5,177.39385	0.64196	7,680.59714	0.00000	0.00000
2,4-Dinitrophenol	7.74550	7.08346	0.66204	7.72507	0.02044	0.00000	0.00000
2,4-Dinitrotoluene	3.50850	2.88957	0.61893	0.59401	2.91450	0.00000	0.00000
2,4-Toluene diisocyanate	67.40469	54.59477	12.80992	64.68525	2.71945	0.00000	0.00000
2-Chloroacetophenone	0.02800	0.02096	0.00704	0.02772	0.00028	0.00000	0.00000
2-Nitropropane	55.46246	52.15140	3.31106	54.21458	1.24787	0.00000	0.00000
3,3'-Dichlorobenzidene	0.51705	0.38807	0.12897	0.51189	0.00515	0.00000	0.00000
3,3'-Dimethoxybenzidine	0.87700	0.65634	0.22066	0.86823	0.00877	0.00000	0.00000
3,3'-Dimethylbenzidine	0.31600	0.23649	0.07951	0.31284	0.00316	0.00000	0.00000
4,4'-Methylenebis(2-chloroaniline)	0.92945	0.61097	0.31848	0.91624	0.01321	0.00000	0.00000
4,4'-Methylenedianiline	3.97348	3.61660	0.35689	3.83849	0.13500	0.00000	0.00000
4,4'-Methylenediphenyl diisocyanate (MDI)	244.24576	117.53081	126.71495	195.79506	48.45070	0.00000	0.00000
4,6-Dinitro-o-cresol (including salts)	0.58850	0.44471	0.14379	0.58262	0.00588	0.00000	0.00000
4-Aminobiphenyl	0.18200	0.13621	0.04579	0.18018	0.00182	0.00000	0.00000
4-Dimethylaminoazobenzene	0.30800	0.23051	0.07749	0.30492	0.00308	0.00000	0.00000
4-Nitrobiphenyl	0.37300	0.27915	0.09385	0.36927	0.00373	0.00000	0.00000
4-Nitrophenol	1.54100	1.17946	0.36154	1.52561	0.01539	0.00000	0.00000
Acetaldehyde	137,166.15337	78,064.33352	59,101.81986	21,337.93570	50,533.50105	27,963.87210	37,330.84452
Acetamide	0.02806	0.02425	0.00381	0.01080	0.01726	0.00000	0.00000
Acetonitrile	1,450.60505	1,241.98190	208.62315	1,393.62584	56.97922	0.00000	0.00000
Acetophenone	291.09852	229.79161	61.30691	284.07511	7.02341	0.00000	0.00000
Acrolein	62,660.26492	28,916.89707	33,743.36785	757.25478	49,632.35798	5,541.61622	6,729.03594
Acrylamide	35.44595	33.50764	1.93831	34.59024	0.85571	0.00000	0.00000
Acrylic acid	537.18231	497.56824	39.61407	523.19176	13.99055	0.00000	0.00000
Acrylonitrile	2,543.60095	2,240.67795	302.92301	2,072.52780	471.07315	0.00000	0.00000
Allyl chloride	111.88139	100.70670	11.17469	109.10577	2.77563	0.00000	0.00000
Aniline	477.45592	397.74288	79.71305	463.54493	13.91100	0.00000	0.00000
Antimony Compounds	103.37891	79.04959	24.32932	96.76993	6.60794	0.00092	0.00012
Arsenic Compounds(inorganic including arsine)	288.43199	203.83865	84.59334	230.28133	55.36306	1.74759	1.04001
Asbestos	8.50164	6.49092	2.01072	7.22413	1.27752	0.00000	0.00000
Benzene (including benzene from gasoline)	389,347.91615	258,044.08078	131,303.83537	36,440.67051	73,236.15328	207,259.79811	72,411.29424
Benzidine	0.40000	0.30137	0.09863	0.39578	0.00422	0.00000	0.00000
Benzotrichloride	10.23650	7.92716	2.30934	10.02818	0.20832	0.00000	0.00000
Benzyl chloride	33.55681	28.15413	5.40268	31.98701	1.56979	0.00000	0.00000

Table 7-3 (continued)

188 HAP Name	Total National Emissions (tpy)	Total URBAN	Total RURAL	Total Point	Total Area	Mobile: Onroad	Mobile: Nonroad
Beryllium Compounds	12.39344	8.52101	3.87243	9.75393	2.61950	0.00000	0.02000
Biphenyl	863.26496	557.22057	306.04439	832.45108	30.79378	0.01470	0.00539
Bis(2-ethylhexyl)phthalate (DEHP)	859.69315	634.86878	224.82437	814.37464	45.31851	0.00000	0.00000
Bis(chloromethyl) ether	0.43589	0.40250	0.03339	0.42541	0.01048	0.00000	0.00000
Bromoform	8.47200	6.34042	2.13158	8.38728	0.08472	0.00000	0.00000
Cadmium Compounds	199.12086	161.96437	37.15649	158.93650	39.87356	0.00068	0.31011
Calcium cyanamide	6.31000	6.31000	0.00000	3.55821	2.75179	0.00000	0.00000
Captan	2.16500	1.88151	0.28349	2.14356	0.02144	0.00000	0.00000
Carbaryl	1.91825	0.80109	1.11716	0.01337	1.90489	0.00000	0.00000
Carbon disulfide	130,279.58604	73,572.05191	56,707.53414	129,372.03640	907.54965	0.00000	0.00000
Carbon tetrachloride	5,040.51156	2,948.70650	2,091.80506	4,941.43259	99.07897	0.00000	0.00000
Carbonyl sulfide	12,244.95793	10,303.97508	1,940.98285	10,028.32515	2,216.63278	0.00000	0.00000
Catechol	12.72200	12.72108	0.00092	10.39509	2.32692	0.00000	0.00000
Chlordane	0.05100	0.04766	0.00334	0.04894	0.00206	0.00000	0.00000
Chlorine	77,392.29466	71,653.78964	5,738.50501	74,484.06927	2,908.11374	0.08699	0.02465
Chloroacetic acid	40.85950	31.16850	9.69100	39.51657	1.34293	0.00000	0.00000
Chlorobenzene	11,900.28694	8,919.49726	2,980.78968	2,827.48748	9,072.79946	0.00000	0.00000
Chlorobenzilate	2.01430	2.01430	0.00000	2.01430	0.00000	0.00000	0.00000
Chloroform	22,735.28325	13,243.25231	9,492.03094	22,158.72255	576.56070	0.00000	0.00000
Chloromethyl methyl ether	6.18450	5.73760	0.44690	6.02049	0.16401	0.00000	0.00000
Chloroprene	1,050.82941	1,014.07621	36.75320	1,039.40976	11.41966	0.00000	0.00000
Chromium Compounds	897.15022	727.40183	169.74840	573.79284	269.62666	27.93068	25.80005
Cobalt Compounds	65.69997	50.39620	15.30377	60.20699	5.49278	0.00017	0.00003
Coke Oven Emissions	1,763.69000	1,702.87310	60.81690	1,763.69000	0.00000	0.00000	0.00000
Cresol/Cresylic acid (mixed isomers)	11,327.03156	6,194.55986	5,132.47171	11,316.14891	10.88266	0.00000	0.00000
Cumene	11,418.27801	7,232.35156	4,185.92645	11,260.55879	157.71921	0.00000	0.00000
Cyanide Compounds	2,405.32835	2,279.03686	126.29149	1,318.00259	1,087.32577	0.00000	0.00000
Dibutyl phthalate	132.83833	109.90941	22.92892	126.25370	6.58464	0.00000	0.00000
Dichloroethyl ether (Bis[2-chloroethyl]ether)	7.05000	3.68018	3.36982	6.20388	0.84612	0.00000	0.00000
Dichlorvos	0.25750	0.11363	0.14387	0.25334	0.00417	0.00000	0.00000
Diethanolamine	86.25437	78.38355	7.87081	85.24043	1.01393	0.00000	0.00000
Diethyl sulfate	3.11950	2.79060	0.32890	3.04919	0.07031	0.00000	0.00000
Dimethyl phthalate	153.74479	29.25621	124.48857	147.67810	6.06669	0.00000	0.00000
Dimethyl sulfate	3.84856	2.23144	1.61712	3.31418	0.53437	0.00000	0.00000
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	339.73705	301.08182	38.65523	328.80845	10.92860	0.00000	0.00000
Ethyl Chloride	2,187.89548	1,724.48321	463.41227	2,023.60286	164.29262	0.00000	0.00000
Ethyl acrylate	159.97414	151.47688	8.49726	153.58316	6.39099	0.00000	0.00000
Ethyl carbamate (Urethane) chloride (Chloroethane)	9.05249	7.73941	1.31309	8.49508	0.55742	0.00000	0.00000
Ethylbenzene	150,602.95817	108,128.60788	42,474.35029	15,993.92246	3,698.17652	93,074.62992	37,836.22926
Ethylene dibromide (Dibromoethane)	57.53988	37.63972	19.90017	53.93372	3.60617	0.00000	0.00000
Ethylene dichloride (1,2-Dichloroethane)	4,198.60429	3,018.35098	1,180.25331	4,095.94988	102.65441	0.00000	0.00000
Ethylene glycol	12,310.94365	9,807.54261	2,503.40104	11,396.21899	914.72465	0.00000	0.00000
Ethylene oxide	2,761.74987	2,340.11324	421.63663	1,423.16536	1,338.58451	0.00000	0.00000
Ethylene thiourea	1.68367	1.68367	0.00000	1.68367	0.00000	0.00000	0.00000
Ethyldene dichloride (1,1-Dichloroethane)	273.34234	227.28584	46.05650	33.16484	240.17751	0.00000	0.00000
Fine mineral fibers	0.44862	0.44862	0.00000	0.44862	0.00000	0.00000	0.00000
Formaldehyde	347,326.51381	199,513.35769	147,813.15612	30,493.37702	140,611.16651	96,816.50995	79,405.46035
Glycol ethers	68,264.06943	57,179.63996	11,084.42947	56,932.15300	11,331.91643	0.00000	0.00000
Heptachlor	0.03100	0.02897	0.00203	0.02975	0.00125	0.00000	0.00000
Hexachlorobenzene	1.58467	1.29928	0.28539	1.01845	0.56622	0.00000	0.00000
Hexachlorobutadiene	15.09100	11.08324	4.00776	14.89069	0.20031	0.00000	0.00000

Table 7-3 (continued)

188 HAP Name	Total National Emissions (tpy)	Total URBAN	Total RURAL	Total Point	Total Area	Mobile: Onroad	Mobile: Nonroad
Hexachlorocyclopentadiene	4.07400	3.32985	0.74415	3.85667	0.21734	0.00000	0.00000
Hexachloroethane	25.54000	24.54020	0.99980	6.19737	19.34263	0.00000	0.00000
Hexamethylene diisocyanate	0.13974	0.13974	0.00000	0.13974	0.00000	0.00000	0.00000
Hexane	188,727.94715	142,971.89168	45,756.05548	60,034.41637	23,237.08544	80,624.60109	24,831.84425
Hydrazine	20.46295	13.27919	7.18377	19.06044	1.40251	0.00000	0.00000
Hydrochloric acid (Hydrogen chloride [gas only])	339,677.12607	249,698.74905	89,978.37702	298,750.97695	40,926.14911	0.00000	0.00000
Hydrogen fluoride (Hydrofluoric acid)	33,883.94892	21,979.39136	11,904.55757	31,841.65853	2,042.29040	0.00000	0.00000
Hydroquinone	90.38896	68.97085	21.41811	89.44520	0.94376	0.00000	0.00000
Isophorone	402.62448	290.36651	112.25797	281.70725	120.91723	0.00000	0.00000
Lead Compounds	3,307.14259	2,738.84886	568.29373	1,690.88478	419.99999	418.01335	778.24448
Maleic anhydride	215.24860	191.48367	23.76493	212.31816	2.93044	0.00000	0.00000
Manganese Compounds	2,908.92074	2,007.63778	901.28296	2,349.91056	506.98243	21.68763	30.34011
Mercury Compounds	205.95234	163.65582	42.29652	123.36402	70.69372	4.96458	6.93002
Methanol	385,706.55818	253,285.37433	132,421.18385	294,128.87245	91,577.65111	0.00000	0.03462
Methoxychlor	0.04800	0.04800	0.00000	0.04648	0.00152	0.00000	0.00000
Methyl bromide (Bromomethane)	30,984.83370	24,978.61034	6,006.22336	3,144.75726	27,840.07644	0.00000	0.00000
Methyl chloride (Chloromethane)	6,448.11666	5,420.61004	1,027.50662	6,278.24335	169.87331	0.00000	0.00000
Methyl chloroform (1,1,1-Trichloroethane)	214,949.10156	185,432.31956	29,516.78200	137,397.75765	77,551.34391	0.00000	0.00000
Methyl ethyl ketone (2-Butanone)	207,791.18347	183,446.29278	24,344.89069	188,650.74773	19,140.23388	0.18848	0.01338
Methyl iodide (Iodomethane)	36.85000	33.98526	2.86474	35.83947	1.01053	0.00000	0.00000
Methyl isobutyl ketone (Hexone)	35,693.57825	29,212.34520	6,481.23304	31,062.51426	4,631.06400	0.00000	0.00000
Methyl isocyanate	5.48950	4.93401	0.55549	5.31432	0.17517	0.00000	0.00000
Methyl methacrylate	1,844.52803	1,502.97025	341.55778	1,662.50712	182.02091	0.00000	0.00000
Methyl tert-butyl ether	14,433.46646	10,632.91143	3,800.55502	5,258.32154	9,175.14492	0.00000	0.00000
Methylene chloride (Dichloromethane)	124,285.50179	100,615.53602	23,669.96577	87,900.64802	36,384.85376	0.00000	0.00000
Methylhydrazine	0.01300	0.01136	0.00164	0.01284	0.00016	0.00000	0.00000
N,N-Dimethylaniline	22.57050	18.95418	3.61632	3.08854	19.48195	0.00000	0.00000
N,N-Dimethylformamide	3,284.93673	3,063.75202	221.18470	3,175.27412	109.66261	0.00000	0.00000
N-Nitrosodimethylamine	19.86900	18.39534	1.47367	19.28712	0.58189	0.00000	0.00000
N-Nitrosomorpholine	0.63000	0.47149	0.15851	0.62370	0.00630	0.00000	0.00000
Nickel Compounds	1,329.52989	1,195.97140	133.55850	916.23402	318.41674	15.54908	79.33005
Nitrobenzene	48.57008	44.84957	3.72051	47.33858	1.23150	0.00000	0.00000
Parathion	0.61000	0.60750	0.00250	0.59066	0.01934	0.00000	0.00000
Pentachloronitrobenzene (Quintobenzene)	2.45669	1.73269	0.72400	2.40955	0.04715	0.00000	0.00000
Pentachlorophenol	6.20350	2.57703	3.62647	2.69357	3.50993	0.00000	0.00000
Phenol	11,514.93212	7,935.49774	3,579.43438	11,165.60703	349.32157	0.00000	0.00352
Phosgene	4.57351	3.91680	0.65671	4.43914	0.13437	0.00000	0.00000
Phosphine	3.13436	3.13436	0.00000	2.85807	0.27629	0.00000	0.00000
Phosphorus Compounds	161.98552	146.90031	15.08522	124.97520	37.01033	0.00000	0.00000
Phthalic anhydride	468.36056	425.68662	42.67394	437.88687	30.47368	0.00000	0.00000
Polychlorinated biphenyls (Aroclors)	0.04958	0.03845	0.01114	0.02430	0.02528	0.00000	0.00000
Polycyclic Organic Matter	17,535.29518	13,232.81263	4,302.48255	7,585.71388	9,839.12904	76.98431	33.46794
Propionaldehyde	14,187.80399	10,363.07906	3,824.72492	2,461.84192	6.07369	5,283.05624	6,436.83213
Propoxur (Baygon)	0.00500	0.00500	0.00000	0.00478	0.00022	0.00000	0.00000
Propylene dichloride (1,2-Dichloropropane)	654.98931	541.79724	113.19208	611.35524	43.63406	0.00000	0.00000
Propylene oxide	3,257.81786	2,939.97556	317.84229	2,923.70035	334.11751	0.00000	0.00000
Quinoline	26.02550	24.02860	1.99690	25.52454	0.50096	0.00000	0.00000
Quinone (p-Benzoquinone)	8.05050	6.99636	1.05414	7.97080	0.07970	0.00000	0.00000
Radionuclides (including radon)	7.80214	7.72292	0.07922	7.80214	0.00000	0.00000	0.00000
Selenium Compounds	355.37407	257.83442	97.53965	335.16779	19.66621	0.00006	0.54001
Styrene	56,139.36148	41,332.13409	14,807.22739	32,326.89290	3,811.43977	17,777.70916	2,223.31966
Styrene oxide	0.17600	0.17548	0.00052	0.17242	0.00359	0.00000	0.00000

Table 7-3 (continued)

188 HAP Name	Total National Emissions (tpy)	Total URBAN	Total RURAL	Total Point	Total Area	Mobile: Onroad	Mobile: Nonroad
Tetrachloroethylene (Perchloroethylene)	128,000.71200	105,308.90354	22,691.80846	22,960.63954	105,040.07247	0.00000	0.00000
Titanium tetrachloride	6.24600	5.71788	0.52812	6.12960	0.11640	0.00000	0.00000
Toluene	1,108,201.65839	792,801.42530	315,400.23308	195,867.77842	129,771.36341	631,796.16151	150,766.35504
Total Unspeciated HAPs	580,281.00000	508,817.13009	71,463.86991	575,265.21000	5,015.79000	0.00000	0.00000
Total Unspeciated METALS	64.31000	54.17513	10.13487	63.66690	0.64310	0.00000	0.00000
Trichloroethylene	71,998.64943	63,351.74653	8,646.90290	58,240.01715	13,758.63228	0.00000	0.00000
Triethylamine	443.52550	403.50053	40.02497	328.89055	114.63494	0.00000	0.00000
Trifluralin	10.15027	9.08566	1.06461	9.82151	0.32876	0.00000	0.00000
Unspeciated Particulate HAPs, Chromium and Cobalt	0.43000	0.37840	0.05160	0.31820	0.11180	0.00000	0.00000
Vinyl acetate	3,864.49624	3,281.14888	583.34736	3,730.06177	134.43448	0.00000	0.00000
Vinyl bromide	1.43700	1.32001	0.11699	1.42743	0.00958	0.00000	0.00000
Vinyl chloride	2,712.08592	2,389.81085	322.27507	2,142.66959	569.41633	0.00000	0.00000
Vinylidene chloride (1,1-Dichloroethylene)	223.89224	208.88484	15.00740	176.57818	47.31406	0.00000	0.00000
Xylenes (mixed isomers)	702,577.76064	509,581.85529	192,995.90535	130,837.39623	65,901.91643	355,204.93935	150,633.50864
o-Anisidine	0.82360	0.67164	0.15196	0.81440	0.00921	0.00000	0.00000
o-Toluidine	9.30050	8.73017	0.57033	8.72284	0.57765	0.00000	0.00000
p-Phenylenediamine	2.13950	1.84372	0.29578	2.11602	0.02348	0.00000	0.00000

Note(s): The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-4. Baseline NTI (1990 to 1993)
188 HAPS by Urban and Rural Designation and Source Sector (Point, Area, On-road, and Non-road)

188 HAP Name	Total Emissions (tpy)	Urban (U1+U2) Emissions (tpy)				MOBILE: On-Road	MOBILE: Non-Road
		Total URBAN	POINT	AREA	Total MOBILE		
1,1,2,2-Tetrachloroethane	248.56834	209.64691	44.33364	165.31327	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	761.36164	511.34897	506.50926	4.83971	0.00000	0.00000	0.00000
1,1-Dimethylhydrazine	0.58484	0.57639	0.57477	0.00162	0.00000	0.00000	0.00000
1,2,4-Trichlorobenzene	5,865.94500	3,072.21190	3,062.42987	9.78203	0.00000	0.00000	0.00000
1,2-Dibromo-3-chloropropane	14.93700	11.17880	11.06701	0.11179	0.00000	0.00000	0.00000
1,2-Epoxybutane	38.05489	37.15589	35.77124	1.38466	0.00000	0.00000	0.00000
1,2-Propylenimine (2-Methylaziridine)	0.41950	0.40444	0.39552	0.00892	0.00000	0.00000	0.00000
1,3-Butadiene	71,523.56768	42,590.06162	3,608.52001	5,505.33549	33,476.20612	24,272.22230	9,203.98382
1,3-Dichloropropene	19,927.87000	16,652.12824	29.63065	16,622.49758	0.00000	0.00000	0.00000
1,3-Propane sultone	0.00072	0.00072	0.00072	0.00000	0.00000	0.00000	0.00000
1,4-Dichlorobenzene	5,225.64801	4,228.57842	480.06567	3,748.51275	0.00000	0.00000	0.00000
1,4-Dioxane (1,4-Diethyleneoxide)	855.24718	716.54579	698.59597	17.94981	0.00000	0.00000	0.00000
2,2,4-Trimethylpentane	29,627.36202	25,490.36625	21,623.70597	3,864.36043	2.29985	1.81653	0.48333
2,3,7,8-TCDD TEQ	0.00264	0.00221	0.00147	0.00068	0.00006	0.00006	0.00000
2,4,5-Trichlorophenol	0.52300	0.39141	0.38750	0.00391	0.00000	0.00000	0.00000
2,4,6-Trichlorophenol	0.59785	0.46601	0.45965	0.00636	0.00000	0.00000	0.00000
2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters)	7,681.23909	2,503.84525	0.50638	2,503.33887	0.00000	0.00000	0.00000
2,4-Dinitrophenol	7.74550	7.08346	7.06763	0.01584	0.00000	0.00000	0.00000
2,4-Dinitrotoluene	3.50850	2.88957	0.45520	2.43438	0.00000	0.00000	0.00000
2,4-Toluene diisocyanate	67.40469	54.59477	52.81209	1.78268	0.00000	0.00000	0.00000
2-Chloroacetophenone	0.02800	0.02096	0.02075	0.00021	0.00000	0.00000	0.00000
2-Nitropropane	55.46246	52.15140	51.02966	1.12174	0.00000	0.00000	0.00000
3,3'-Dichlorobenzidine	0.51705	0.38807	0.38421	0.00386	0.00000	0.00000	0.00000
3,3'-Dimethoxybenzidine	0.87700	0.65634	0.64978	0.00656	0.00000	0.00000	0.00000
3,3'-Dimethylbenzidine	0.31600	0.23649	0.23413	0.00236	0.00000	0.00000	0.00000
4,4'-Methylenebis(2-chloroaniline)	0.92945	0.61097	0.60523	0.00574	0.00000	0.00000	0.00000
4,4'-Methylenedianiline	3.97348	3.61660	3.48515	0.13145	0.00000	0.00000	0.00000
4,4'-Methylenediphenyl diisocyanate (MDI)	244.24576	117.53081	93.81110	23.71971	0.00000	0.00000	0.00000
4,6-Dinitro-o-cresol (including salts)	0.58850	0.44471	0.44027	0.00444	0.00000	0.00000	0.00000
4-Aminobiphenyl	0.18200	0.13621	0.13485	0.00136	0.00000	0.00000	0.00000
4-Dimethylaminoazobenzene	0.30800	0.23051	0.22820	0.00231	0.00000	0.00000	0.00000
4-Nitrobiphenyl	0.37300	0.27915	0.27636	0.00279	0.00000	0.00000	0.00000
4-Nitrophenol	1.54100	1.17946	1.16769	0.01178	0.00000	0.00000	0.00000
Acetaldehyde	137,166.15337	78,064.33352	13,784.58594	14,311.14936	49,968.59822	18,515.76338	31,452.83484
Acetamide	0.02806	0.02425	0.00983	0.01442	0.00000	0.00000	0.00000
Acetonitrile	1,450.60505	1,241.98190	1,192.97265	49.00925	0.00000	0.00000	0.00000
Acetophenone	291.09852	229.79161	223.45004	6.34157	0.00000	0.00000	0.00000
Acrolein	62,660.26492	28,916.89707	602.87233	18,900.59786	9,413.42688	3,669.25674	5,744.17014
Acrylamide	35.44595	33.50764	32.70125	0.80639	0.00000	0.00000	0.00000
Acrylic acid	537.18231	497.56824	484.64749	12.92076	0.00000	0.00000	0.00000
Acrylonitrile	2,543.60095	2,240.67795	1,834.51554	406.16240	0.00000	0.00000	0.00000
Allyl chloride	111.88139	100.70670	98.24759	2.45912	0.00000	0.00000	0.00000
Aniline	477.45592	397.74288	386.58855	11.15433	0.00000	0.00000	0.00000
Antimony Compounds	103.37891	79.04959	73.86863	5.17992	0.00104	0.00092	0.00012
Arsenic Compounds(inorganic including arsine)	288.43199	203.83865	171.26981	30.55316	2.01568	1.15715	0.85853
Asbestos	8.50164	6.49092	5.72894	0.76198	0.00000	0.00000	0.00000
Benzene (including benzene from gasoline)	389,347.91615	258,044.08078	31,478.71629	28,699.07455	197,866.28994	137,232.63757	60,633.65237

Table 7-4 (continued)

188 HAP Name	Total Emissions (tpy)	Urban (U1+U2) Emissions (tpy)					
		Total URBAN	POINT	AREA	Total MOBILE	MOBILE: On-Road	MOBILE: Non-Road
Benzidine	0.40000	0.30137	0.29814	0.00323	0.00000	0.00000	0.00000
Benzotrichloride	10.23650	7.92716	7.76807	0.15909	0.00000	0.00000	0.00000
Benzyl chloride	33.55681	28.15413	26.96487	1.18925	0.00000	0.00000	0.00000
Beryllium Compounds	12.39344	8.52101	6.27767	2.22682	0.01651	0.00000	0.01651
Biphenyl	863.26496	557.22057	542.28797	14.91250	0.02010	0.01470	0.00539
Bis(2-ethylhexyl)phthalate (DEHP)	859.69315	634.86878	600.25010	34.61868	0.00000	0.00000	0.00000
Bis(chloromethyl) ether	0.43589	0.40250	0.39235	0.01015	0.00000	0.00000	0.00000
Bromoform	8.47200	6.34042	6.27701	0.06340	0.00000	0.00000	0.00000
Cadmium Compounds	199.12086	161.96437	128.85511	32.85255	0.25670	0.00068	0.25602
Calcium cyanamide	6.31000	6.31000	3.55821	2.75179	0.00000	0.00000	0.00000
Captan	2.16500	1.88151	1.86288	0.01863	0.00000	0.00000	0.00000
Carbaryl	1.91825	0.80109	0.01162	0.78948	0.00000	0.00000	0.00000
Carbon disulfide	130,279.58604	73,572.05191	72,783.21274	788.83917	0.00000	0.00000	0.00000
Carbon tetrachloride	5,040.51156	2,948.70650	2,865.86375	82.84275	0.00000	0.00000	0.00000
Carbonyl sulfide	12,244.95793	10,303.97508	8,547.65521	1,756.31987	0.00000	0.00000	0.00000
Catechol	12.72200	12.72108	10.39418	2.32691	0.00000	0.00000	0.00000
Chlordane	0.05100	0.04766	0.04563	0.00203	0.00000	0.00000	0.00000
Chlorine	77,392.29466	71,653.78964	69,139.00077	2,514.67723	0.11164	0.08699	0.02465
Chloroacetic acid	40.85950	31.16850	30.26007	0.90843	0.00000	0.00000	0.00000
Chlorobenzene	11,900.28694	8,919.49726	1,378.18167	7,541.31559	0.00000	0.00000	0.00000
Chlorobenzilate	2.01430	2.01430	2.01430	0.00000	0.00000	0.00000	0.00000
Chloroform	22,735.28325	13,243.25231	12,767.56836	475.68395	0.00000	0.00000	0.00000
Chloromethyl methyl ether	6.18450	5.73760	5.58114	0.15646	0.00000	0.00000	0.00000
Chloroprene	1,050.82941	1,014.07621	1,003.25388	10.82233	0.00000	0.00000	0.00000
Chromium Compounds	897.15022	727.40183	457.83085	229.53022	40.04075	18.49374	21.54702
Cobalt Compounds	65.69997	50.39620	45.86676	4.52924	0.00020	0.00017	0.00003
Coke Oven Emissions	1,763.69000	1,702.87310	1,702.87310	0.00000	0.00000	0.00000	0.00000
Cresol/Cresylic acid (mixed isomers)	11,327.03156	6,194.55986	6,184.60431	9.95555	0.00000	0.00000	0.00000
Cumene	11,418.27801	7,232.35156	7,107.77751	124.57404	0.00000	0.00000	0.00000
Cyanide Compounds	2,405.32835	2,279.03686	1,194.96817	1,084.06869	0.00000	0.00000	0.00000
Dibutyl phthalate	132.83833	109.90941	104.84784	5.06157	0.00000	0.00000	0.00000
Dichloroethyl ether (Bis[2-chloroethyl]ether)	7.05000	3.68018	3.25543	0.42475	0.00000	0.00000	0.00000
Dichlorvos	0.25750	0.11363	0.11245	0.00119	0.00000	0.00000	0.00000
Diethanolamine	86.25437	78.38355	77.43954	0.94401	0.00000	0.00000	0.00000
Diethyl sulfate	3.11950	2.79060	2.72365	0.06695	0.00000	0.00000	0.00000
Dimethyl phthalate	153.74479	29.25621	25.11576	4.14045	0.00000	0.00000	0.00000
Dimethyl sulfate	3.84856	2.23144	2.07993	0.15151	0.00000	0.00000	0.00000
Epichlorohydrin (I-Chloro-2,3-epoxypropane)	339.73705	301.08182	291.06777	10.01405	0.00000	0.00000	0.00000
Ethyl Chloride	2,187.89548	1,724.48321	1,603.93568	120.54753	0.00000	0.00000	0.00000
Ethyl acrylate	159.97414	151.47688	145.70058	5.77631	0.00000	0.00000	0.00000
Ethyl carbamate (Urethane) chloride (Chloroethane)	9.05249	7.73941	7.28704	0.45237	0.00000	0.00000	0.00000
Ethylbenzene	150,602.95817	108,128.60788	11,925.90343	2,948.60218	93,254.10227	61,627.41776	31,626.68451
Ethylene dibromide (Dibromoethane)	57.53988	37.63972	34.72217	2.91755	0.00000	0.00000	0.00000
Ethylene dichloride (1,2-Dichloroethane)	4,198.60429	3,018.35098	2,935.91438	82.43660	0.00000	0.00000	0.00000
Ethylene glycol	12,310.94365	9,807.54261	9,054.23043	753.31217	0.00000	0.00000	0.00000
Ethylene oxide	2,761.74987	2,340.11324	1,214.83105	1,125.28219	0.00000	0.00000	0.00000
Ethylene thiourea	1.68367	1.68367	1.68367	0.00000	0.00000	0.00000	0.00000
Ethyldiene dichloride (1,1-Dichloroethane)	273.34234	227.28584	27.06962	200.21622	0.00000	0.00000	0.00000
Fine mineral fibers	0.44862	0.44862	0.44862	0.00000	0.00000	0.00000	0.00000

Table 7-4 (continued)

188 HAP Name	Total Emissions (tpy)	Urban (U1+U2) Emissions (tpy)						MOBILE: On-Road	MOBILE: Non-Road
		Total URBAN	POINT	AREA	Total MOBILE				
Formaldehyde	347,326.51381	199,513.35769	22,742.15468	45,464.09014	131,307.11287	64,105.41152	67,201.70136		
Glycol ethers	68,264.06943	57,179.63996	47,775.17147	9,404.46849	0.00000	0.00000	0.00000		
Heptachlor	0.03100	0.02897	0.02774	0.00123	0.00000	0.00000	0.00000		
Hexachlorobenzene	1.58467	1.29928	0.88776	0.41152	0.00000	0.00000	0.00000		
Hexachlorobutadiene	15.09100	11.08324	10.93131	0.15193	0.00000	0.00000	0.00000		
Hexachlorocyclopentadiene	4.07400	3.32985	3.19730	0.13256	0.00000	0.00000	0.00000		
Hexachloroethane	25.54000	24.54020	5.25519	19.28501	0.00000	0.00000	0.00000		
Hexamethylene diisocyanate	0.13974	0.13974	0.13974	0.00000	0.00000	0.00000	0.00000		
Hexane	188,727.94715	142,971.89168	51,380.70857	17,464.30677	74,126.87633	53,384.78318	20,742.09315		
Hydrazine	20.46295	13.27919	12.67403	0.60516	0.00000	0.00000	0.00000		
Hydrochloric acid (Hydrogen chloride [gas only])	339,677.12607	249,698.74905	214,323.46626	35,375.28279	0.00000	0.00000	0.00000		
Hydrogen fluoride (Hydrofluoric acid)	33,883.94892	21,979.39136	20,545.94986	1,433.44150	0.00000	0.00000	0.00000		
Hydroquinone	90.38896	68.97085	68.24125	0.72960	0.00000	0.00000	0.00000		
Isophorone	402.62448	290.36651	189.34483	101.02168	0.00000	0.00000	0.00000		
Lead Compounds	3,307.14259	2,738.84886	1,375.86698	353.35750	1,009.62438	276.77789	732.84649		
Maleic anhydride	215.24860	191.48367	188.84454	2.63913	0.00000	0.00000	0.00000		
Manganese Compounds	2,908.92074	2,007.63778	1,576.48735	391.46620	39.68422	14.36083	25.32339		
Mercury Compounds	205.95234	163.65582	94.13728	60.44284	9.07570	3.28720	5.78850		
Methanol	385,706.55818	253,285.37433	178,080.03925	75,205.30046	0.03462	0.00000	0.03462		
Methoxychlor	0.04800	0.04800	0.04648	0.00152	0.00000	0.00000	0.00000		
Methyl bromide (Bromomethane)	30,984.83370	24,978.61034	1,742.82637	23,235.78397	0.00000	0.00000	0.00000		
Methyl chloride (Chloromethane)	6,448.11666	5,420.61004	5,276.90685	143.70319	0.00000	0.00000	0.00000		
Methyl chloroform (1,1,1-Trichloroethane)	214,949.10156	185,432.31956	120,009.49179	65,422.82777	0.00000	0.00000	0.00000		
Methyl ethyl ketone (2-Butanone)	207,791.18347	183,446.29278	167,350.92145	16,095.16947	0.20186	0.18848	0.01338		
Methyl iodide (Iodomethane)	36.85000	33.98526	33.10483	0.88043	0.00000	0.00000	0.00000		
Methyl isobutyl ketone (Hexone)	35,693.57825	29,212.34520	25,470.12833	3,742.21688	0.00000	0.00000	0.00000		
Methyl isocyanate	5.48950	4.93401	4.76831	0.16570	0.00000	0.00000	0.00000		
Methyl methacrylate	1,844.52803	1,502.97025	1,352.70287	150.26738	0.00000	0.00000	0.00000		
Methyl tert-butyl ether	14,433.46646	10,632.91143	4,732.01411	5,900.89733	0.00000	0.00000	0.00000		
Methylene chloride (Dichloromethane)	124,285.50179	100,615.53602	77,763.81818	22,851.71784	0.00000	0.00000	0.00000		
Methylhydrazine	0.01300	0.01136	0.01122	0.00014	0.00000	0.00000	0.00000		
N,N-Dimethylaniline	22.57050	18.95418	2.67727	16.27690	0.00000	0.00000	0.00000		
N,N-Dimethylformamide	3,284.93673	3,063.75202	2,961.41867	102.33336	0.00000	0.00000	0.00000		
N-Nitrosodimethylamine	19.86900	18.39534	17.85409	0.54125	0.00000	0.00000	0.00000		
N-Nitrosomorpholine	0.63000	0.47149	0.46677	0.00471	0.00000	0.00000	0.00000		
Nickel Compounds	1,329.52989	1,195.97140	828.33228	291.72860	75.91051	10.29552	65.61499		
Nitrobenzene	48.57008	44.84957	43.71915	1.13042	0.00000	0.00000	0.00000		
Parathion	0.61000	0.60750	0.58824	0.01926	0.00000	0.00000	0.00000		
Pentachloronitrobenzene (Quintobenzene)	2.45669	1.73269	1.70098	0.03172	0.00000	0.00000	0.00000		
Pentachlorophenol	6.20350	2.57703	1.50718	1.06985	0.00000	0.00000	0.00000		
Phenol	11,514.93212	7,935.49774	7,669.30455	266.18967	0.00352	0.00000	0.00352		
Phosgene	4.57351	3.91680	3.80795	0.10885	0.00000	0.00000	0.00000		
Phosphine	3.13436	3.13436	2.85807	0.27629	0.00000	0.00000	0.00000		
Phosphorus Compounds	161.98552	146.90031	113.58462	33.31569	0.00000	0.00000	0.00000		
Phthalic anhydride	468.36056	425.68662	400.25739	25.42922	0.00000	0.00000	0.00000		
Polychlorinated biphenyls (Aroclors)	0.04958	0.03845	0.01779	0.02065	0.00000	0.00000	0.00000		
Polycyclic Organic Matter	17,535.29518	13,232.81263	6,437.01690	6,715.67805	80.11768	51.51161	28.60606		
Propionaldehyde	14,187.80399	10,363.07906	1,437.47115	5.35368	8,920.25423	3,498.05810	5,422.19613		
Propoxur (Baygon)	0.00500	0.00500	0.00478	0.00022	0.00000	0.00000	0.00000		

Table 7-4 (continued)

188 HAP Name	Total Emissions (tpy)	Urban (U1+U2) Emissions (tpy)				MOBILE: On-Road	MOBILE: Non-Road
		Total URBAN	POINT	AREA	Total MOBILE		
Propylene dichloride (1,2-Dichloropropane)	654.98931	541.79724	503.05067	38.74656	0.00000	0.00000	0.00000
Propylene oxide	3,257.81786	2,939.97556	2,633.35279	306.62277	0.00000	0.00000	0.00000
Quinoline	26.02550	24.02860	23.60395	0.42465	0.00000	0.00000	0.00000
Quinone (p-Benzoquinone)	8.05050	6.99636	6.92709	0.06926	0.00000	0.00000	0.00000
Radionuclides (including radon)	7.80214	7.72292	7.72292	0.00000	0.00000	0.00000	0.00000
Selenium Compounds	355.37407	257.83442	241.35026	16.03832	0.44585	0.00006	0.44578
Styrene	56,139.36148	41,332.13409	24,795.36012	2,886.49054	13,650.28344	11,771.21670	1,879.06674
Styrene oxide	0.17600	0.17548	0.17190	0.00358	0.00000	0.00000	0.00000
Tetrachloroethylene (Perchloroethylene)	128,000.71200	105,308.90354	20,600.63841	84,708.26514	0.00000	0.00000	0.00000
Titanium tetrachloride	6.24600	5.71788	5.60694	0.11093	0.00000	0.00000	0.00000
Toluene	1,108,201.65839	792,801.42530	161,051.20601	87,363.08919	544,387.13010	418,330.57430	126,056.55580
Total Unspeciated HAPs	580,281.00000	508,817.13009	504,495.12844	4,322.00165	0.00000	0.00000	0.00000
Total Unspeciated METALS	64.31000	54.17513	53.63338	0.54175	0.00000	0.00000	0.00000
Trichloroethylene	71,998.64943	63,351.74653	51,322.24782	12,029.49871	0.00000	0.00000	0.00000
Triethylamine	443.52550	403.50053	306.74315	96.75737	0.00000	0.00000	0.00000
Trifluralin	10.15027	9.08566	8.78653	0.29913	0.00000	0.00000	0.00000
Unspeciated Particulate HAPs, Chromium and Cobalt	0.43000	0.37840	0.28002	0.09838	0.00000	0.00000	0.00000
Vinyl acetate	3,864.49624	3,281.14888	3,167.48735	113.66154	0.00000	0.00000	0.00000
Vinyl bromide	1.43700	1.32001	1.31169	0.00833	0.00000	0.00000	0.00000
Vinyl chloride	2,712.08592	2,389.81085	1,908.33131	481.47954	0.00000	0.00000	0.00000
Vinylidene chloride (1,1-Dichloroethylene)	223.89224	208.88484	169.26497	39.61987	0.00000	0.00000	0.00000
Xylenes (mixed isomers)	702,577.76064	509,581.85529	102,875.68299	45,608.90358	361,097.26872	235,191.52059	125,905.74814
o-Anisidine	0.82360	0.67164	0.66396	0.00769	0.00000	0.00000	0.00000
o-Toluidine	9.30050	8.73017	8.19512	0.53504	0.00000	0.00000	0.00000
p-Phenylenediamine	2.13950	1.84372	1.82318	0.02054	0.00000	0.00000	0.00000

Note: EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

Table 7-4 (continued)

188 HAP Name	Total Emissions (tpy)	Rural Emissions (tpy)					
		Total RURAL	POINT	AREA	Total MOBILE	MOBILE: On-Road	MOBILE: Non-Road
1,1,2,2-Tetrachloroethane	248.56834	38.92143	5.88620	33.03523	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	761.36164	250.01267	247.90852	2.10415	0.00000	0.00000	0.00000
1,1-Dimethylhydrazine	0.58484	0.00845	0.00836	0.00008	0.00000	0.00000	0.00000
1,2,4-Trichlorobenzene	5,865.94500	2,793.73310	2,787.40979	6.32331	0.00000	0.00000	0.00000
1,2-Dibromo-3-chloropropane	14.93700	3.75820	3.72062	0.03758	0.00000	0.00000	0.00000
1,2-Epoxybutane	38.05489	0.89900	0.84246	0.05654	0.00000	0.00000	0.00000
1,2-Propylenimine (2-Methylaziridine)	0.41950	0.01506	0.01491	0.00015	0.00000	0.00000	0.00000
1,3-Butadiene	71,523.56768	28,933.50606	329.40967	14,535.19930	14,068.89709	12,385.75594	1,683.14114
1,3-Dichloropropene	19,927.87000	3,275.74176	0.85564	3,274.88613	0.00000	0.00000	0.00000
1,3-Propane sultone	0.00072	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
1,4-Dichlorobenzene	5,225.64801	997.06959	270.09664	726.97294	0.00000	0.00000	0.00000
1,4-Dioxane (1,4-Diethyleneoxide)	855.24718	138.70139	133.88844	4.81295	0.00000	0.00000	0.00000
2,2,4-Trimethylpentane	29,627.36202	4,136.99577	2,197.83382	1,939.16195	0.00000	0.00000	0.00000
2,3,7,8-TCDD TEQ	0.00264	0.00043	0.00023	0.00016	0.00003	0.00003	0.00000
2,4,5-Trichlorophenol	0.52300	0.13159	0.13027	0.00132	0.00000	0.00000	0.00000
2,4,6-Trichlorophenol	0.59785	0.13184	0.13052	0.00132	0.00000	0.00000	0.00000
2,4-D (2,4-Dichlorophenoxyacetic Acid)(including salts and esters)	7,681.23909	5,177.39385	0.13558	5,177.25827	0.00000	0.00000	0.00000
2,4-Dinitrophenol	7.74550	0.66204	0.65744	0.00460	0.00000	0.00000	0.00000
2,4-Dinitrotoluene	3.50850	0.61893	0.13881	0.48012	0.00000	0.00000	0.00000
2,4-Toluene diisocyanate	67.40469	12.80992	11.87316	0.93677	0.00000	0.00000	0.00000
2-Chloroacetophenone	0.02800	0.00704	0.00697	0.00007	0.00000	0.00000	0.00000
2-Nitropropane	55.46246	3.31106	3.18492	0.12613	0.00000	0.00000	0.00000
3,3'-Dichlorobenzidene	0.51705	0.12897	0.12768	0.00129	0.00000	0.00000	0.00000
3,3'-Dimethoxybenzidine	0.87700	0.22066	0.21845	0.00221	0.00000	0.00000	0.00000
3,3'-Dimethylbenzidine	0.31600	0.07951	0.07871	0.00080	0.00000	0.00000	0.00000
4,4'-Methylenebis(2-chloroaniline)	0.92945	0.31848	0.31101	0.00747	0.00000	0.00000	0.00000
4,4'-Methylenedianiline	3.97348	0.35689	0.35334	0.00355	0.00000	0.00000	0.00000
4,4'-Methylenediphenyl diisocyanate (MDI)	244.24576	126.71495	101.98396	24.73099	0.00000	0.00000	0.00000
4,6-Dinitro-o-cresol (including salts)	0.58850	0.14379	0.14235	0.00144	0.00000	0.00000	0.00000
4-Aminobiphenyl	0.18200	0.04579	0.04533	0.00046	0.00000	0.00000	0.00000
4-Dimethylaminoazobenzene	0.30800	0.07749	0.07672	0.00077	0.00000	0.00000	0.00000
4-Nitrobiphenyl	0.37300	0.09385	0.09291	0.00094	0.00000	0.00000	0.00000
4-Nitrophenol	1.54100	0.36154	0.35792	0.00361	0.00000	0.00000	0.00000
Acetaldehyde	137,166.15337	59,101.81986	7,553.34976	36,222.35169	15,326.11840	9,448.10872	5,878.00968
Acetamide	0.02806	0.00381	0.00097	0.00284	0.00000	0.00000	0.00000
Acetonitrile	1,450.60505	208.62315	200.65319	7.96997	0.00000	0.00000	0.00000
Acetophenone	291.09852	61.30691	60.62507	0.68184	0.00000	0.00000	0.00000
Acrolein	62,660.26492	33,743.36785	154.38245	30,731.76012	2,857.22529	1,872.35948	984.86580
Acrylamide	35.44595	1.93831	1.88899	0.04932	0.00000	0.00000	0.00000
Acrylic acid	537.18231	39.61407	38.54427	1.06979	0.00000	0.00000	0.00000
Acrylonitrile	2,543.60095	302.92301	238.01226	64.91075	0.00000	0.00000	0.00000
Allyl chloride	111.88139	11.17469	10.85818	0.31651	0.00000	0.00000	0.00000
Aniline	477.45592	79.71305	76.95638	2.75667	0.00000	0.00000	0.00000
Antimony Compounds	103.37891	24.32932	22.90130	1.42802	0.00000	0.00000	0.00000
Arsenic Compounds(inorganic including arsine)	288.43199	84.59334	59.01152	24.80990	0.77191	0.59044	0.18148
Asbestos	8.50164	2.01072	1.49519	0.51554	0.00000	0.00000	0.00000
Benzene (including benzene from gasoline)	389,347.91615	131,303.83537	4,961.95422	44,537.07873	81,804.80241	70,027.16054	11,777.64187
Benzidine	0.40000	0.09863	0.09764	0.00099	0.00000	0.00000	0.00000
Benzotrichloride	10.23650	2.30934	2.26011	0.04923	0.00000	0.00000	0.00000

Table 7-4 (continued)

188 HAP Name	Total Emissions (tpy)	Rural Emissions (tpy)					MOBILE: On-Road	MOBILE: Non-Road
		Total RURAL	POINT	AREA	Total MOBILE			
Benzyl chloride	33.55681	5.40268	5.02214	0.38054	0.00000	0.00000	0.00000	0.00000
Beryllium Compounds	12.39344	3.87243	3.47626	0.39268	0.00349	0.00000	0.00000	0.00349
Biphenyl	863.26496	306.04439	290.16311	15.88128	0.00000	0.00000	0.00000	0.00000
Bis(2-ethylhexyl)phthalate (DEHP)	859.69315	224.82437	214.12454	10.69983	0.00000	0.00000	0.00000	0.00000
Bis(chloromethyl) ether	0.43589	0.03339	0.03306	0.00033	0.00000	0.00000	0.00000	0.00000
Bromoform	8.47200	2.13158	2.11027	0.02132	0.00000	0.00000	0.00000	0.00000
Cadmium Compounds	199.12086	37.15649	30.08139	7.02101	0.05409	0.00000	0.00000	0.05409
Calcium cyanamide	6.31000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Captan	2.16500	0.28349	0.28068	0.00281	0.00000	0.00000	0.00000	0.00000
Carbaryl	1.91825	1.11716	0.00175	1.11541	0.00000	0.00000	0.00000	0.00000
Carbon disulfide	130,279.58604	56,707.53414	56,588.82366	118.71048	0.00000	0.00000	0.00000	0.00000
Carbon tetrachloride	5,040.51156	2,091.80506	2,075.56884	16.23622	0.00000	0.00000	0.00000	0.00000
Carbonyl sulfide	12,244.95793	1,940.98285	1,480.66994	460.31291	0.00000	0.00000	0.00000	0.00000
Catechol	12.72200	0.00092	0.00091	0.00001	0.00000	0.00000	0.00000	0.00000
Chlordane	0.05100	0.00334	0.00331	0.00003	0.00000	0.00000	0.00000	0.00000
Chlorine	77,392.29466	5,738.50501	5,345.06850	393.43651	0.00000	0.00000	0.00000	0.00000
Chloroacetic acid	40.85950	9.69100	9.25650	0.43450	0.00000	0.00000	0.00000	0.00000
Chlorobenzene	11,900.28694	2,980.78968	1,449.30581	1,531.48387	0.00000	0.00000	0.00000	0.00000
Chlorobenzilate	2.01430	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Chloroform	22,735.28325	9,492.03094	9,391.15419	100.87675	0.00000	0.00000	0.00000	0.00000
Chloromethyl methyl ether	6.18450	0.44690	0.43935	0.00755	0.00000	0.00000	0.00000	0.00000
Chloroprene	1,050.82941	36.75320	36.15588	0.59733	0.00000	0.00000	0.00000	0.00000
Chromium Compounds	897.15022	169.74840	115.96199	40.09644	13.68997	9.43694	4.25303	
Cobalt Compounds	65.69997	15.30377	14.34023	0.96354	0.00000	0.00000	0.00000	0.00000
Coke Oven Emissions	1,763.69000	60.81690	60.81690	0.00000	0.00000	0.00000	0.00000	0.00000
Cresol/Cresylic acid (mixed isomers)	11,327.03156	5,132.47171	5,131.54460	0.92711	0.00000	0.00000	0.00000	0.00000
Cumene	11,418.27801	4,185.92645	4,152.78128	33.14517	0.00000	0.00000	0.00000	0.00000
Cyanide Compounds	2,405.32835	126.29149	123.03442	3.25708	0.00000	0.00000	0.00000	0.00000
Dibutyl phthalate	132.83833	22.92892	21.40586	1.52307	0.00000	0.00000	0.00000	0.00000
Dichloroethyl ether (Bis[2-chloroethyl]ether)	7.05000	3.36982	2.94845	0.42137	0.00000	0.00000	0.00000	0.00000
Dichlorvos	0.25750	0.14387	0.14089	0.00298	0.00000	0.00000	0.00000	0.00000
Diethanolamine	86.25437	7.87081	7.80089	0.06992	0.00000	0.00000	0.00000	0.00000
Diethyl sulfate	3.11950	0.32890	0.32554	0.00336	0.00000	0.00000	0.00000	0.00000
Dimethyl phthalate	153.74479	124.48857	122.56234	1.92624	0.00000	0.00000	0.00000	0.00000
Dimethyl sulfate	3.84856	1.61712	1.23425	0.38286	0.00000	0.00000	0.00000	0.00000
Epichlorohydrin (I-Chloro-2,3-epoxypropane)	339.73705	38.65523	37.74068	0.91455	0.00000	0.00000	0.00000	0.00000
Ethyl Chloride	2,187.89548	463.41227	419.66718	43.74509	0.00000	0.00000	0.00000	0.00000
Ethyl acrylate	159.97414	8.49726	7.88258	0.61468	0.00000	0.00000	0.00000	0.00000
Ethyl carbamate (Urethane) chloride (Chloroethane)	9.05249	1.31309	1.20804	0.10505	0.00000	0.00000	0.00000	0.00000
Ethylbenzene	150,602.95817	42,474.35029	4,068.01903	749.57434	37,656.75692	31,447.21216	6,209.54475	
Ethylene dibromide (Dibromoethane)	57.53988	19.90017	19.21155	0.68862	0.00000	0.00000	0.00000	0.00000
Ethylene dichloride (1,2-Dichloroethane)	4,198.60429	1,180.25331	1,160.03550	20.21781	0.00000	0.00000	0.00000	0.00000
Ethylene glycol	12,310.94365	2,503.40104	2,341.98856	161.41248	0.00000	0.00000	0.00000	0.00000
Ethylene oxide	2,761.74987	421.63663	208.33431	213.30232	0.00000	0.00000	0.00000	0.00000
Ethylene thiourea	1.68367	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ethyldiene dichloride (1,1-Dichloroethane)	273.34234	46.05650	6.09522	39.96129	0.00000	0.00000	0.00000	0.00000
Fine mineral fibers	0.44862	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Formaldehyde	347,326.51381	147,813.15612	7,751.22234	95,147.07637	44,914.85742	32,711.09843	12,203.75899	
Glycol ethers	68,264.06943	11,084.42947	9,156.98153	1,927.44794	0.00000	0.00000	0.00000	

Table 7-4 (continued)

188 HAP Name	Rural Emissions (tpy)						MOBILE: On-Road	MOBILE: Non-Road
	Total Emissions (tpy)	Total RURAL	POINT	AREA	Total MOBILE			
Heptachlor	0.03100	0.00203	0.00201	0.00002	0.00000	0.00000	0.00000	0.00000
Hexachlorobenzene	1.58467	0.28539	0.13069	0.15470	0.00000	0.00000	0.00000	0.00000
Hexachlorobutadiene	15.09100	4.00776	3.95938	0.04838	0.00000	0.00000	0.00000	0.00000
Hexachlorocyclopentadiene	4.07400	0.74415	0.65937	0.08478	0.00000	0.00000	0.00000	0.00000
Hexachloroethane	25.54000	0.99980	0.94218	0.05762	0.00000	0.00000	0.00000	0.00000
Hexamethylene diisocyanate	0.13974	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hexane	188,727.94715	45,756.05548	8,653.70780	5,772.77867	31,329.56901	27,239.81791	4,089.75110	
Hydrazine	20.46295	7.18377	6.38641	0.79735	0.00000	0.00000	0.00000	0.00000
Hydrochloric acid (Hydrogen chloride [gas only])	339,677.12607	89,978.37702	84,427.51069	5,550.86632	0.00000	0.00000	0.00000	0.00000
Hydrogen fluoride (Hydrofluoric acid)	33,883.94892	11,904.55757	11,295.70867	608.84890	0.00000	0.00000	0.00000	0.00000
Hydroquinone	90.38896	21.41811	21.20395	0.21416	0.00000	0.00000	0.00000	0.00000
Isophorone	402.62448	112.25797	92.36242	19.89555	0.00000	0.00000	0.00000	0.00000
Lead Compounds	3,307.14259	568.29373	315.01780	66.64249	186.63345	141.23546	45.39799	
Maleic anhydride	215.24860	23.76493	23.47362	0.29131	0.00000	0.00000	0.00000	0.00000
Manganese Compounds	2,908.92074	901.28296	773.42321	115.51623	12.34352	7.32680	5.01672	
Mercury Compounds	205.95234	42.29652	29.22674	10.25088	2.81890	1.67738	1.14152	
Methanol	385,706.55818	132,421.18385	116,048.83320	16,372.35065	0.00000	0.00000	0.00000	0.00000
Methoxychlor	0.04800	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Methyl bromide (Bromomethane)	30,984.83370	6,006.22336	1,401.93089	4,604.29247	0.00000	0.00000	0.00000	0.00000
Methyl chloride (Chloromethane)	6,448.11666	1,027.50662	1,001.33650	26.17012	0.00000	0.00000	0.00000	0.00000
Methyl chloroform (1,1,1-Trichloroethane)	214,949.10156	29,516.78200	17,388.26586	12,128.51614	0.00000	0.00000	0.00000	0.00000
Methyl ethyl ketone (2-Butanone)	207,791.18347	24,344.89069	21,299.82628	3,045.06441	0.00000	0.00000	0.00000	0.00000
Methyl iodide (Iodomethane)	36.85000	2.86474	2.73464	0.13010	0.00000	0.00000	0.00000	0.00000
Methyl isobutyl ketone (Hexone)	35,693.57825	6,481.23304	5,592.38593	888.84712	0.00000	0.00000	0.00000	0.00000
Methyl isocyanate	5.48950	0.55549	0.54601	0.00947	0.00000	0.00000	0.00000	0.00000
Methyl methacrylate	1,844.52803	341.55778	309.80425	31.75353	0.00000	0.00000	0.00000	0.00000
Methyl tert-butyl ether	14,433.46646	3,800.55502	526.30743	3,274.24759	0.00000	0.00000	0.00000	0.00000
Methylene chloride (Dichloromethane)	124,285.50179	23,669.96577	10,136.82984	13,533.13592	0.00000	0.00000	0.00000	0.00000
Methylhydrazine	0.01300	0.00164	0.00162	0.00002	0.00000	0.00000	0.00000	0.00000
N,N-Dimethylaniline	22.57050	3.61632	0.41127	3.20505	0.00000	0.00000	0.00000	0.00000
N,N-Dimethylformamide	3,284.93673	221.18470	213.85545	7.32925	0.00000	0.00000	0.00000	0.00000
N-Nitrosodimethylamine	19.86900	1.47367	1.43303	0.04064	0.00000	0.00000	0.00000	0.00000
N-Nitrosomorpholine	0.63000	0.15851	0.15693	0.00159	0.00000	0.00000	0.00000	0.00000
Nickel Compounds	1,329.52989	133.55850	87.90174	26.68814	18.96861	5.25356	13.71506	
Nitrobenzene	48.57008	3.72051	3.61943	0.10108	0.00000	0.00000	0.00000	0.00000
Parathion	0.61000	0.00250	0.00242	0.00008	0.00000	0.00000	0.00000	0.00000
Pentachloronitrobenzene (Quintobenzene)	2.45669	0.72400	0.70857	0.01543	0.00000	0.00000	0.00000	0.00000
Pentachlorophenol	6.20350	3.62647	1.18639	2.44008	0.00000	0.00000	0.00000	0.00000
Phenol	11,514.93212	3,579.43438	3,496.30248	83.13190	0.00000	0.00000	0.00000	0.00000
Phosgene	4.57351	0.65671	0.63119	0.02552	0.00000	0.00000	0.00000	0.00000
Phosphine	3.13436	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Phosphorus Compounds	161.98552	15.08522	11.39058	3.69464	0.00000	0.00000	0.00000	0.00000
Phthalic anhydride	468.36056	42.67394	37.62948	5.04446	0.00000	0.00000	0.00000	0.00000
Polychlorinated biphenyls (Aroclors)	0.04958	0.01114	0.00651	0.00463	0.00000	0.00000	0.00000	0.00000
Polycyclic Organic Matter	17,535.29518	4,302.48255	1,148.69698	3,123.45099	30.33458	25.47270	4.86188	
Propionaldehyde	14,187.80399	3,824.72492	1,024.37077	0.72001	2,799.63414	1,784.99814	1,014.63600	
Propoxur (Baygon)	0.00500	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
Propylene dichloride (1,2-Dichloropropane)	654.98931	113.19208	108.30457	4.88750	0.00000	0.00000	0.00000	
Propylene oxide	3,257.81786	317.84229	290.34756	27.49474	0.00000	0.00000	0.00000	

Table 7-4 (continued)

188 HAP Name	Total Emissions (tpy)	Rural Emissions (tpy)					MOBILE: On-Road	MOBILE: Non-Road
		Total RURAL	POINT	AREA	Total MOBILE			
Quinoline	26.02550	1.99690	1.92059	0.07631	0.00000	0.00000	0.00000	0.00000
Quinone (p-Benzoquinone)	8.05050	1.05414	1.04371	0.01044	0.00000	0.00000	0.00000	0.00000
Radionuclides (including radon)	7.80214	0.07922	0.07922	0.00000	0.00000	0.00000	0.00000	0.00000
Selenium Compounds	355.37407	97.53965	93.81753	3.62789	0.09423	0.00000	0.00000	0.09423
Styrene	56,139.36148	14,807.22739	7,531.53278	924.94923	6,350.74537	6,006.49246	344.25292	
Styrene oxide	0.17600	0.00052	0.00052	0.00001	0.00000	0.00000	0.00000	0.00000
Tetrachloroethylene (Perchloroethylene)	128,000.71200	22,691.80846	2,360.00113	20,331.80733	0.00000	0.00000	0.00000	0.00000
Titanium tetrachloride	6.24600	0.52812	0.52266	0.00547	0.00000	0.00000	0.00000	0.00000
Toluene	1,108,201.65839	315,400.23308	34,816.57241	42,408.27422	238,175.38645	213,465.58721	24,709.79924	
Total Unspeciated HAPs	580,281.00000	71,463.86991	70,770.08156	693.78835	0.00000	0.00000	0.00000	0.00000
Total Unspeciated METALS	64.31000	10.13487	10.03352	0.10135	0.00000	0.00000	0.00000	0.00000
Trichloroethylene	71,998.64943	8,646.90290	6,917.76933	1,729.13357	0.00000	0.00000	0.00000	0.00000
Triethylamine	443.52550	40.02497	22.14740	17.87757	0.00000	0.00000	0.00000	0.00000
Trifluralin	10.15027	1.06461	1.03498	0.02963	0.00000	0.00000	0.00000	0.00000
Unspeciated Particulate HAPs, Chromium and Cobalt	0.43000	0.05160	0.03818	0.01342	0.00000	0.00000	0.00000	0.00000
Vinyl acetate	3,864.49624	583.34736	562.57442	20.77294	0.00000	0.00000	0.00000	0.00000
Vinyl bromide	1.43700	0.11699	0.11574	0.00125	0.00000	0.00000	0.00000	0.00000
Vinyl chloride	2,712.08592	322.27507	234.33828	87.93679	0.00000	0.00000	0.00000	0.00000
Vinylidene chloride (1,1-Dichloroethylene)	223.89224	15.00740	7.31321	7.69419	0.00000	0.00000	0.00000	0.00000
Xylenes (mixed isomers)	702,577.76064	192,995.90535	27,961.71324	20,293.01285	144,741.17926	120,013.41876	24,727.76050	
o-Anisidine	0.82360	0.15196	0.15044	0.00152	0.00000	0.00000	0.00000	0.00000
o-Toluidine	9.30050	0.57033	0.52772	0.04261	0.00000	0.00000	0.00000	0.00000
p-Phenylenediamine	2.13950	0.29578	0.29284	0.00294	0.00000	0.00000	0.00000	0.00000

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-5. Baseline NTI (1990 to 1993)
188 HAPs by State (Point, Area, On-road, and Non-road)

State	Total	188-List HAP Emissions (tpy)			MOBILE: On-Road	MOBILE: Non-Road
		POINT	AREA			
Alabama	163,292	102,129	21,852		30,049	9,261
Alaska	101,454	2,740	91,932		5,310	1,473
Arizona	51,295	18,029	11,692		13,157	8,418
Arkansas	83,581	41,423	14,407		22,292	5,459
California	491,166	183,989	86,077		151,809	69,292
Colorado	66,905	20,295	19,672		19,078	7,859
Connecticut	76,732	46,829	10,488		11,887	7,528
Delaware	17,274	10,174	1,985		3,590	1,525
District of Columbia	6,583	693	1,530		2,981	1,379
Florida	200,415	57,177	40,473		72,504	30,261
Georgia	173,341	74,634	28,060		55,426	15,221
Hawaii	14,850	1,886	3,315		6,803	2,845
Idaho	29,366	3,522	13,154		10,317	2,372
Illinois	245,986	114,079	37,523		67,656	26,728
Indiana	157,964	82,172	23,024		39,949	12,818
Iowa	71,294	28,967	10,676		25,274	6,377
Kansas	72,201	34,186	10,949		21,327	5,739
Kentucky	118,633	57,740	17,522		34,715	8,656
Louisiana	166,927	111,097	18,764		27,307	9,759
Maine	45,066	22,696	10,507		8,967	2,896
Maryland	70,763	21,631	13,297		24,745	11,089
Massachusetts	84,371	28,126	17,990		24,140	14,116
Michigan	214,078	100,887	35,290		56,267	21,635
Minnesota	94,113	29,861	21,731		32,260	10,260
Mississippi	88,063	39,737	15,853		26,576	5,898
Missouri	135,396	59,561	22,888		40,733	12,214
Montana	31,037	6,186	14,938		8,027	1,887
Nebraska	34,778	10,816	6,242		14,041	3,679
Nevada	19,118	4,130	4,549		7,497	2,941
New Hampshire	24,909	9,869	5,327		7,135	2,578
New Jersey	172,543	106,049	21,108		27,488	17,897
New Mexico	35,493	7,027	10,637		14,276	3,552
New York	267,090	94,383	52,425		78,483	41,798
North Carolina	173,488	77,075	28,089		52,870	15,453
North Dakota	16,738	4,860	4,545		5,837	1,497
Ohio	256,532	125,774	38,453		67,255	25,049
Oklahoma	73,465	23,377	15,709		27,110	7,269
Oregon	74,757	27,695	21,023		19,305	6,734
Pennsylvania	227,812	102,692	39,771		57,595	27,755
Rhode Island	17,562	6,718	3,134		5,367	2,342
South Carolina	107,593	60,878	15,381		23,315	8,019
South Dakota	15,272	2,659	3,649		7,344	1,619
Tennessee	195,631	126,355	21,835		36,132	11,309
Texas	506,367	285,785	67,534		113,157	39,891
Utah	104,117	77,457	11,191		11,391	4,078
Vermont	11,928	1,371	3,307		5,928	1,321
Virginia	148,893	63,274	25,209		45,815	14,595
Washington	133,232	67,143	23,960		30,509	11,620
West Virginia	84,607	52,172	10,838		17,478	4,118
Wisconsin	125,329	57,360	21,349		35,349	11,271
Wyoming	16,350	3,960	6,547		4,747	1,096

Note(s): The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-6. Baseline NTI (1990 to 1993)
33 HAPs by State (Point, Area, On-road, and Non-road)

State	Total	33 Urban HAP Emissions (tpy)			MOBILE: On-Road	MOBILE: Non-Road
		POINT	AREA			
Alabama	31,634	9,694	11,482		7,226	3,231
Alaska	69,102	610	66,610		1,277	606
Arizona	14,933	2,290	6,525		3,163	2,955
Arkansas	20,631	4,594	8,736		5,361	1,940
California	125,546	29,954	34,308		36,507	24,777
Colorado	23,384	3,083	12,817		4,588	2,896
Connecticut	15,178	5,973	3,719		2,859	2,627
Delaware	3,138	1,065	684		863	526
District of Columbia	1,932	257	480		717	477
Florida	53,073	8,233	16,531		17,436	10,873
Georgia	43,658	10,016	14,807		13,329	5,507
Hawaii	4,577	378	1,432		1,636	1,131
Idaho	14,209	636	10,231		2,481	861
Illinois	51,251	12,365	13,003		16,270	9,612
Indiana	35,442	12,577	8,769		9,607	4,490
Iowa	15,161	3,065	3,779		6,078	2,240
Kansas	16,293	5,500	3,659		5,129	2,004
Kentucky	25,314	4,826	9,026		8,348	3,114
Louisiana	28,369	9,740	8,624		6,567	3,438
Maine	14,483	3,196	8,086		2,157	1,045
Maryland	17,841	3,013	4,931		5,951	3,946
Massachusetts	23,015	5,122	6,985		5,805	5,103
Michigan	49,053	11,437	16,397		13,531	7,688
Minnesota	25,884	4,095	10,349		7,758	3,682
Mississippi	22,873	5,476	8,958		6,391	2,048
Missouri	31,750	6,778	10,661		9,796	4,515
Montana	14,775	800	11,366		1,930	680
Nebraska	7,442	836	1,929		3,377	1,300
Nevada	5,733	553	2,253		1,803	1,124
New Hampshire	7,489	1,639	3,215		1,716	919
New Jersey	27,161	7,282	6,910		6,610	6,358
New Mexico	11,931	904	6,316		3,433	1,278
New York	71,368	17,392	20,171		18,874	14,932
North Carolina	41,541	8,996	14,293		12,714	5,537
North Dakota	3,292	394	960		1,404	534
Ohio	54,289	15,569	13,721		16,174	8,825
Oklahoma	20,979	4,260	7,644		6,520	2,556
Oregon	25,797	4,361	14,346		4,643	2,448
Pennsylvania	54,091	14,288	15,979		13,850	9,974
Rhode Island	3,996	646	1,220		1,291	839
South Carolina	22,818	6,825	7,571		5,607	2,815
South Dakota	3,936	233	1,358		1,766	580
Tennessee	29,904	7,110	10,096		8,689	4,009
Texas	95,759	28,265	25,913		27,212	14,369
Utah	12,322	2,273	5,821		2,739	1,488
Vermont	4,439	247	2,288		1,426	479
Virginia	35,320	6,153	12,852		11,018	5,297
Washington	36,234	10,519	14,123		7,337	4,255
West Virginia	15,959	3,873	6,443		4,203	1,441
Wisconsin	29,971	7,156	10,355		8,501	3,959
Wyoming	7,145	290	5,325		1,141	389

Note(s): The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

**Table 7-7. Baseline NTI (1990 to 1993)
33 HAPs by Tier 1**

NTI Pollutant Description	Emissions (tpy) for Tier 1 Reporting Levels						
	01 FUEL COMB. ELEC. UTIL.	02 FUEL COMB. INDUSTRIAL	03 FUEL COMB. OTHER	04 CHEMICAL & ALLIED PRODUCT MFG	05 METALS PROCESSING	06 PETROLEUM & RELATED INDUSTRIES	07 OTHER INDUSTRIAL PROCESSES
1,1,2,2-Tetrachloroethane	0.00000	0.00000	0.00000	17.78800	0.51700	0.01850	11.32150
Ethylene Dichloride	27.02126	0.81934	0.13473	2,898.72120	0.00190	91.81822	1,105.11616
Propylene Dichloride	0.00000	0.00001	0.00000	428.43400	0.00000	0.66500	201.84800
1,3-Butadiene	0.51750	48.74947	0.94777	3,277.96648	530.13000	152.43093	11.48258
Acetaldehyde	65.84379	2,300.74122	33.14230	6,657.73027	2.80059	61.96659	13,321.32602
Acrolein	28.55861	8.71325	1.33634	397.40819	11.10208	2.17710	308.81792
Acrylonitrile	0.00042	0.00000	0.00000	2,054.03964	0.62600	46.36117	24.34623
Arsenic & Compounds (inorganic including arsine)	61.48658	13.52304	7.44388	3.06196	106.28059	40.55300	44.21509
Benzene	37.84816	1,037.31036	32.46966	5,079.51076	2,771.11883	25,830.05279	2,076.41741
Beryllium & Compounds	7.17599	0.78875	2.10119	0.00056	0.91142	0.26163	0.90331
Cadmium & Compounds	4.00910	2.80706	3.10371	9.22847	131.77837	6.60694	15.72217
Carbon tetrachloride	0.00613	0.01472	0.00032	637.27465	0.00000	48.48671	4,282.45080
Chloroform	0.00540	0.03079	0.00986	1,746.31005	0.32800	1.78696	20,444.24719
Chromium & Compounds	76.64199	14.50598	7.02827	68.45539	137.89791	42.98149	431.04281
Coke Oven Emissions	0.00000	0.00000	0.00000	0.00000	826.73000	0.00000	0.00000
Ethylene Dibromide	0.00314	0.00345	0.00014	28.80755	0.00007	11.14484	7.38021
Ethylene Oxide	0.00000	0.00000	0.00000	949.76887	0.00000	9.11563	585.64322
Formaldehyde	198.76632	26,223.73958	685.19718	3,285.17222	134.38944	753.11352	9,829.56747
Hexachlorobenzene	0.00000	0.00010	0.00002	1.43850	0.00000	0.00000	0.00001
Hydrazine	0.00000	0.00000	0.10511	15.51250	0.50250	3.28905	0.63904
Lead & Compounds	87.08918	30.14759	17.83845	181.47978	839.68597	47.17316	552.67951
Manganese & Compounds	192.16294	547.20368	245.54949	222.08554	1,187.28718	50.00145	357.28506
Mercury & Compounds	53.28055	2.92661	3.13193	13.41729	3.45209	1.46299	10.53589
Methylene chloride	119.63081	9.09658	1.39897	45,291.70359	217.60550	29.39032	34,111.13747
Nickel & Compounds	450.48274	125.73762	120.67300	20.22190	88.27336	111.05618	253.55360
Polychlorinated biphenyls	0.00001	0.00499	0.00000	0.00000	0.00000	0.00000	0.00943
16-PAH	8.81088	218.44557	73.99793	865.61650	1,947.12400	1,317.14250	1,288.75071
Tetrachloroethylene	27.50444	1.29597	0.38331	668.97825	396.59375	17.88168	6,857.57749
Trichloroethylene	0.19297	7.53408	0.73649	383.98201	952.72172	67.64605	12,332.57601
Vinyl chloride	0.08442	0.68360	0.05934	2,154.41688	0.00000	4.65101	16.80269
1,3-Dichloropropene	0.00000	0.00000	0.00000	30.29300	0.78700	0.00000	0.00000
Quinoline	0.00000	0.00000	0.00000	12.49950	9.06150	4.37950	0.08500
2,3,7,8-TCDD TEQ	0.00011	0.00009	0.00004	0.00000	0.00020	0.00000	0.00007

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-7 (continued)

NTI Pollutant Description	Emissions (tpy) for Tier 1 Reporting Levels						
	08	09	10	11	12	13	14
	SOLVENT UTILIZATION	STORAGE & TRANSPORT	WASTE DISPOSAL & RECYCLING	HIGHWAY VEHICLES	OFF-HIGHWAY	NATURAL SOURCES	MISC.
1,1,2,2-Tetrachloroethane	0.00000	0.00000	218.92334	0.00000	0.00000	0.00000	0.00000
Ethylene Dichloride	16.42611	7.48812	50.46048	0.00000	0.00000	0.00000	0.59675
Propylene Dichloride	0.00000	0.00000	24.04231	0.00000	0.00000	0.00000	0.00000
1,3-Butadiene	0.04703	24.35674	4.43295	36,657.97824	10,887.12866	0.00000	19,927.39934
Acetaldehyde	6.82552	0.05892	20.97927	27,963.87210	37,330.86678	0.00000	49,400.00000
Acrolein	1.01533	0.01852	24.12055	5,541.61622	6,729.03608	0.00000	49,606.34473
Acrylonitrile	2.26141	0.07673	415.88935	0.00000	0.00000	0.00000	0.00000
Arsenic & Compounds (inorganic including arsine)	0.01758	0.57411	7.78977	1.74759	1.04001	0.00001	0.69877
Benzene	278.28297	11,967.59638	629.87446	207,259.79811	72,411.29730	0.00000	59,936.33896
Beryllium & Compounds	0.00463	0.00435	0.17002	0.00000	0.02000	0.00000	0.05160
Cadmium & Compounds	0.91489	0.08872	24.37846	0.02668	0.31011	0.00003	0.14613
Carbon tetrachloride	0.43361	1.68034	70.03906	0.00000	0.00000	0.00000	0.12523
Chloroform	7.04926	1.76505	409.65664	0.00000	0.00000	0.00000	124.09405
Chromium & Compounds	51.91006	0.11269	12.39676	27.93068	25.83012	0.00038	0.41570
Coke Oven Emissions	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	936.96000
Ethylene Dibromide	4.97356	1.79958	3.42732	0.00000	0.00000	0.00000	0.00000
Ethylene Oxide	12.93591	0.03810	13.95000	0.00000	0.00000	0.00000	1,190.29814
Formaldehyde	733.66738	4.94350	27.75885	96,816.50994	79,405.52602	0.00000	129,228.16239
Hexachlorobenzene	0.00000	0.00000	0.00004	0.00000	0.00000	0.00000	0.14600
Hydrazine	0.31678	0.09795	0.00002	0.00000	0.00000	0.00000	0.00000
Lead & Compounds	76.84471	4.82841	270.92826	418.03935	778.25807	0.00019	2.14997
Manganese & Compounds	29.59095	5.58907	11.72747	21.68763	30.34058	0.00210	8.40762
Mercury & Compounds	0.01422	0.05540	103.12032	4.96458	6.93002	1.30002	1.36043
Methylene chloride	37,708.01972	18.39548	2,125.70399	0.00000	16.90000	0.00000	4,636.51936
Nickel & Compounds	35.68361	0.14186	28.06791	15.54908	79.33141	0.00011	0.75751
Polychlorinated biphenyls	0.00014	0.00102	0.03399	0.00000	0.00000	0.00000	0.00000
16-PAH	2,038.45400	729.08450	97.94350	75.93000	33.29000	0.00000	8,570.59160
Tetrachloroethylene	115,418.70645	17.23776	1,000.83989	9.50000	77.40000	0.00000	3,506.81301
Trichloroethylene	57,683.51050	3.69705	455.64005	0.00000	0.00000	0.00000	110.41250
Vinyl chloride	0.61149	0.00001	534.77648	0.00000	0.00000	0.00000	0.00000
1,3-Dichloropropene	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	19,896.79000
Quinoline	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2,3,7,8-TCDD TEQ	0.00000	0.00000	0.00194	0.00009	0.00000	0.00000	0.00009

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-8. Baseline NTI (1990 to 1993) 33 HAPs by Tier 1 and Tier 2

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Acetaldehyde	Acrolein	Acrylonitrile	Arsenic Compounds	Benzene	Beryllium Compounds	1,3-Butadiene
01	FUEL COMB. ELEC. UTIL.	65.84379	28.55861	0.00042	61.48658	37.84816	7.17599	0.51750
01.00	MACT Categories (Utility Study)	64.19462	28.30971	0.00000	60.46005	29.14657	7.12285	0.36014
01.03	Gas	0.25463	0.07648	0.00000	0.00000	0.04787	0.00000	0.00000
01.04	Other	0.30662	0.02835	0.00000	0.00195	2.20616	0.00005	0.00000
01.05	Internal Combustion	1.08792	0.14408	0.00042	1.02458	6.44756	0.05309	0.15736
02	FUEL COMB. INDUSTRIAL	2,300.74122	8.71325	0.00000	13.52304	1,037.31036	0.78875	48.74947
02.00	MACT Categories	2,292.04293	7.71711	0.00000	13.26288	1,002.55945	0.75371	1.98873
02.01	Coal	0.03517	0.00042	0.00000	0.01053	9.05455	0.00048	0.00000
02.02	Oil	0.87134	0.12241	0.00000	0.22640	0.81561	0.03195	0.10793
02.03	Gas	4.87255	0.02470	0.00000	0.01464	21.07944	0.00095	46.53071
02.04	Other	0.00476	0.00005	0.00000	0.00533	0.51241	0.00089	0.06030
02.05	Internal Combustion	2.91446	0.84857	0.00000	0.00327	3.28891	0.00076	0.06180
03	FUEL COMB. OTHER	33.14230	1.33634	0.00000	7.44388	32.46966	2.10119	0.94777
03.00	MACT Categories	16.18344	0.68760	0.00000	3.70769	7.55116	0.78977	0.24371
03.02	Commercial/Institutional Oil	0.55004	0.01505	0.00000	0.00763	0.41253	0.00531	0.07661
03.03	Commercial/Institutional Gas	0.43899	0.09828	0.00000	0.01961	1.71404	0.00019	0.00286
03.04	Misc. Fuel Comb. (Except Residential)	0.38104	0.14941	0.00000	0.04603	6.56889	0.00792	0.62089
03.05	Residential Wood	0.00179	0.00000	0.00000	1.42692	2.03548	0.00000	0.00370
03.06	Residential Other	15.58700	0.38600	0.00000	2.23600	14.18756	1.29799	0.00000
04	CHEMICAL & ALLIED PRODUCT MFG	6,657.73027	397.40819	2,054.03964	3.06196	5,079.51076	0.00056	3,277.96648
04.00	MACT Categories	4,120.66428	2.73422	1,615.45564	0.13388	2,687.86522	0.00050	2,096.47393
04.01	Organic Chemicals	2,444.75350	394.54742	107.70650	0.00100	2,252.66142	0.00000	953.03592
04.02	Inorganic Chemicals	88.69400	0.12500	25.39300	0.69012	4.14883	0.00000	8.35850
04.03	Polymers & Resins	0.00000	0.00000	0.00000	0.00000	0.01550	0.00000	0.00000
04.04	Agricultural Chemicals	0.00000	0.00000	297.75000	1.92950	7.37080	0.00000	105.85500
04.05	Paints, Varnishes, Lacquers, Enamels	0.00000	0.00000	1.74400	0.00000	9.57115	0.00000	0.00000
04.06	Pharmaceuticals	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
04.07	Other Chemicals	0.33099	0.00055	2.39500	0.30746	110.85833	0.00006	113.14814
05	METALS PROCESSING	2.80059	11.10208	0.62600	106.28059	2,771.11883	0.91142	530.13000
05.00	MACT Categories	2.80045	11.10203	0.62600	102.53965	2,186.37923	0.35030	530.13000
05.01	Nonferrous Metals Processing	0.00004	0.00002	0.00000	3.49073	0.98044	0.55887	0.00000
05.02	Ferrous Metals Processing	0.00009	0.00003	0.00000	0.25000	583.45590	0.00200	0.00000
05.03	Metals Processing NEC	0.00000	0.00000	0.00000	0.00021	0.30325	0.00025	0.00000
06	PETROLEUM & RELATED INDUSTRIES	61.96659	2.17710	46.36117	40.55300	25,830.05279	0.26163	152.43093
06.00	MACT Categories	0.79533	0.00001	0.00000	40.54177	23,970.32152	0.25052	0.11581
06.01	Oil & Gas Production	0.16854	0.01195	0.00000	0.00002	73.37076	0.00010	0.26000
06.02	Petroleum Refineries & Related Industries	60.98623	2.16514	46.36117	0.00111	1,785.93468	0.00167	152.05268
06.03	Asphalt Manufacturing	0.01650	0.00000	0.00000	0.01010	0.42583	0.00935	0.00243
07	OTHER INDUSTRIAL PROCESSES	13,321.32602	308.81792	24.34623	44.21509	2,076.41741	0.90331	11.48258
07.00	MACT Categories	13,071.79777	307.42416	22.06650	14.34869	1,666.42971	0.61632	8.39130
07.01	Agriculture, Food, & Kindred Products	82.71730	0.00152	0.00000	14.38074	0.19494	0.00828	0.25020
07.02	Textiles, Leather, & Apparel Products	0.00027	0.00006	0.00000	0.00022	0.01947	0.00001	0.00000

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Acetaldehyde	Acrolein	Acrylonitrile	Arsenic Compounds	Benzene	Beryllium Compounds	1,3-Butadiene
07.03	Wood, Pulp & Paper, & Publishing Products	45.41750	0.00000	0.00000	3.43368	89.15750	0.00115	0.00000
07.04	Rubber & Miscellaneous Plastic Products	27.05000	0.00000	0.37500	0.00500	0.00000	0.00000	0.00000
07.05	Mineral Products	12.31814	0.02760	0.00350	2.17758	11.43984	0.02974	0.01567
07.06	Machinery Products	0.00000	0.00000	0.00000	0.03523	0.16965	0.00018	0.01000
07.07	Electronic Equipment	0.00000	0.00000	0.00000	0.00000	0.00000	0.00050	0.00000
07.08	Transportation Equipment	0.00365	0.00000	0.00000	0.00000	3.54225	0.00000	0.12500
07.09	Construction	0.00000	0.00000	0.00000	0.00000	7.12500	0.00000	0.00000
07.10	Miscellaneous Industrial Processes	82.02139	1.36458	1.90123	9.83394	298.33905	0.24714	2.69041
08	SOLVENT UTILIZATION	6.82552	1.01533	2.26141	0.01758	278.28297	0.00463	0.04703
08.00	MACT Categories	6.08343	1.01487	2.24426	0.01670	262.83717	0.00290	0.04703
08.01	Degreasing	0.00800	0.00000	0.01699	0.00000	0.32632	0.00000	0.00000
08.02	Graphic Arts	0.00000	0.00000	0.00000	0.00088	0.15300	0.00000	0.00000
08.03	Dry Cleaning	0.00000	0.00000	0.00000	0.00000	0.04111	0.00000	0.00000
08.04	Surface Coating	0.73410	0.00046	0.00016	0.00000	11.94199	0.00164	0.00000
08.05	Other Industrial	0.00000	0.00000	0.00000	0.00000	2.84619	0.00010	0.00000
08.06	Nonindustrial	0.00000	0.00000	0.00000	0.00000	0.13719	0.00000	0.00000
09	STORAGE & TRANSPORT	0.05892	0.01852	0.07673	0.57411	11,967.59638	0.00435	24.35674
09.00	MACT Categories	0.00000	0.00000	0.00000	0.00000	6,121.48618	0.00000	0.00000
09.01	Bulk Terminals & Plants	0.00000	0.00000	0.00000	0.00000	66.76307	0.00000	0.00002
09.02	Petroleum & Petroleum Product Storage	0.05826	0.01850	0.00000	0.00000	133.92712	0.00000	0.65293
09.03	Petroleum & Petroleum Product Transport	0.00026	0.00000	0.07672	0.00000	120.33242	0.00000	19.98118
09.04	Service Stations: Stage I	0.00000	0.00000	0.00000	0.00000	0.08668	0.00000	0.00000
09.05	Service Stations: Stage II	0.00000	0.00000	0.00000	0.00000	5,479.85855	0.00000	0.00000
09.06	Service Stations: Breathing & Emptying	0.00000	0.00000	0.00000	0.00000	0.00444	0.00000	0.00000
09.07	Organic Chemical Storage	0.00040	0.00003	0.00001	0.00000	27.35357	0.00000	0.37401
09.08	Organic Chemical Transport	0.00000	0.00000	0.00000	0.00000	12.09961	0.00000	3.34860
09.09	Inorganic Chemical Storage	0.00000	0.00000	0.00000	0.00003	1.24260	0.00000	0.00000
09.11	Bulk Materials Storage	0.00000	0.00000	0.00000	0.57408	4.44213	0.00435	0.00000
10	WASTE DISPOSAL & RECYCLING	20.97927	24.12055	415.88935	7.78977	629.87446	0.17002	4.43295
10.00	MACT Categories	20.03628	24.11002	415.88237	7.76883	602.34905	0.16974	1.58000
10.01	Incineration	0.00306	0.00000	0.00000	0.00060	0.01759	0.00017	0.00000
10.02	Open Burning	0.00000	0.00000	0.00000	0.00003	0.00006	0.00000	0.00000
10.04	Industrial Waste Water	0.92953	0.00316	0.00316	0.00000	22.46651	0.00000	2.84880
10.05	TSDF	0.00385	0.00382	0.00382	0.02007	0.36839	0.00000	0.00000
10.06	Landfills	0.00195	0.00020	0.00000	0.00000	4.56011	0.00000	0.00000
10.07	Other	0.00461	0.00335	0.00000	0.00025	0.11274	0.00010	0.00415
11	HIGHWAY VEHICLES	27,963.87210	5,541.61622	0.00000	1.74759	207,259.79811	0.00000	36,657.97824
12	OFF-HIGHWAY	37,330.86678	6,729.03608	0.00000	1.04001	72,411.29730	0.02000	10,887.12866
13	NATURAL SOURCES	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000
13.02	Geogenic	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000
14	MISCELLANEOUS	49,400.00000	49,606.34473	0.00000	0.69877	59,936.33896	0.05160	19,927.39934
14.01	Agriculture & Forestry	0.00000	0.00000	0.00000	0.00021	0.00000	0.00000	0.00000

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Acetaldehyde	Acrolein	Acrylonitrile	Arsenic Compounds	Benzene	Beryllium Compounds	1,3-Butadiene
14.02	Other Combustion	49,400.00000	49,606.34472	0.00000	0.00937	55,617.00000	0.00000	19,927.39534
14.03	Catastrophic/Accidental Releases	0.00000	0.00000	0.00000	0.00000	4,250.00000	0.00000	0.00000
14.04	Repair Shops	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14.05	Health Services	0.00000	0.00000	0.00000	0.00000	0.01153	0.00000	0.00000
14.06	Cooling Towers	0.00000	0.00000	0.00000	0.67413	19.31538	0.05131	0.00000
14.07	Fugitive Dust	0.00000	0.00000	0.00000	0.01507	0.00000	0.00029	0.00000
14.21	Consumer Products Usage	0.00000	0.00000	0.00000	0.00000	0.58695	0.00000	0.00000
14.40	Transportation & Public Utilities	0.00000	0.00000	0.00000	0.00000	49.30000	0.00000	0.00000
14.70	Services	0.00000	0.00001	0.00000	0.00000	0.12510	0.00000	0.00400
14.98	Miscellaneous Categories	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Cadmium Compounds	Carbon Tetrachloride	Chloroform	Chromium Compounds	Coke Oven Emissions	Ethylene Dibromide	Propylene Dichloride
01	FUEL COMB. ELEC. UTIL.	4.00910	0.00613	0.00540	76.64199	0.00000	0.00314	0.00000
01.00	MACT Categories (Utility Study)	3.73452	0.00004	0.00008	74.86615	0.00000	0.00027	0.00000
01.03	Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
01.04	Other	0.01217	0.00000	0.00000	0.00125	0.00000	0.00185	0.00000
01.05	Internal Combustion	0.26241	0.00609	0.00533	1.77459	0.00000	0.00103	0.00000
02	FUEL COMB. INDUSTRIAL	2.80706	0.01472	0.03079	14.50598	0.00000	0.00345	0.00001
02.00	MACT Categories	2.74781	0.01405	0.02335	14.17409	0.00000	0.00345	0.00000
02.01	Coal	0.00603	0.00000	0.00000	0.00651	0.00000	0.00000	0.00000
02.02	Oil	0.03053	0.00000	0.00161	0.02665	0.00000	0.00000	0.00000
02.03	Gas	0.01150	0.00053	0.00573	0.00461	0.00000	0.00000	0.00001
02.04	Other	0.01015	0.00014	0.00011	0.00059	0.00000	0.00000	0.00000
02.05	Internal Combustion	0.00104	0.00000	0.00000	0.00353	0.00000	0.00000	0.00000
03	FUEL COMB. OTHER	3.10371	0.00032	0.00986	7.02827	0.00000	0.00014	0.00000
03.00	MACT Categories	1.36492	0.00000	0.00000	2.56996	0.00000	0.00000	0.00000
03.02	Commercial/Institutional Oil	0.00847	0.00000	0.00000	0.00682	0.00000	0.00000	0.00000
03.03	Commercial/Institutional Gas	0.00117	0.00029	0.00354	0.00044	0.00000	0.00014	0.00000
03.04	Misc. Fuel Comb. (Except Residential)	0.03937	0.00002	0.00631	0.13484	0.00000	0.00000	0.00000
03.05	Residential Wood	0.35188	0.00000	0.00000	2.70000	0.00000	0.00000	0.00000
03.06	Residential Other	1.33790	0.00000	0.00000	1.61620	0.00000	0.00000	0.00000
04	CHEMICAL & ALLIED PRODUCT MFG	9.22847	637.27465	1,746.31005	68.45539	0.00000	28.80755	428.43400
04.00	MACT Categories	0.26310	443.39652	744.27522	14.02728	0.00000	13.49750	120.09200
04.01	Organic Chemicals	0.37550	113.94050	944.79440	3.56250	0.00000	11.86000	102.37600
04.02	Inorganic Chemicals	8.24250	33.02151	11.74955	18.55200	0.00000	3.45000	0.00000
04.03	Polymers & Resins	0.00001	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000
04.04	Agricultural Chemicals	0.00000	40.36550	37.59400	1.65550	0.00000	0.00005	0.02600
04.05	Paints, Varnishes, Lacquers, Enamels	0.25620	0.00900	0.00000	9.71791	0.00000	0.00000	0.00000
04.06	Pharmaceuticals	0.00000	0.00000	0.06250	0.00000	0.00000	0.00000	0.00000
04.07	Other Chemicals	0.08616	1.50213	6.43189	11.44269	0.00000	0.00000	66.50000
05	METALS PROCESSING	131.77837	0.00000	0.32800	137.89791	826.73000	0.00007	0.00000
05.00	MACT Categories	120.54338	0.00000	0.32800	74.89745	826.73000	0.00007	0.00000
05.01	Nonferrous Metals Processing	4.96640	0.00000	0.00000	2.56650	0.00000	0.00000	0.00000
05.02	Ferrous Metals Processing	1.33703	0.00000	0.00000	54.76793	0.00000	0.00000	0.00000
05.03	Metals Processing NEC	4.93157	0.00000	0.00000	5.66603	0.00000	0.00000	0.00000
06	PETROLEUM & RELATED INDUSTRIES	6.60694	48.48671	1.78696	42.98149	0.00000	11.14484	0.66500
06.00	MACT Categories	6.57559	0.00000	0.00000	35.70247	0.00000	0.00000	0.00000
06.01	Oil & Gas Production	0.00003	0.00000	0.00435	0.02446	0.00000	0.00068	0.00000
06.02	Petroleum Refineries & Related Industries	0.02455	48.48671	1.75661	7.24354	0.00000	11.14216	0.66500
06.03	Asphalt Manufacturing	0.00678	0.00000	0.02600	0.01102	0.00000	0.00200	0.00000
07	OTHER INDUSTRIAL PROCESSES	15.72217	4,282.45080	20,444.24719	431.04281	0.00000	7.38021	201.84800
07.00	MACT Categories	3.58286	4,278.88550	18,511.93969	224.65670	0.00000	6.88424	6.84800
07.01	Agriculture, Food, & Kindred Products	0.06623	0.00024	29.33677	0.27248	0.00000	0.00000	0.00000
07.02	Textiles, Leather, & Apparel Products	0.00000	0.00250	0.00247	0.00000	0.00000	0.00000	0.00000

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Cadmium Compounds	Carbon Tetrachloride	Chloroform	Chromium Compounds	Coke Oven Emissions	Ethylene Dibromide	Propylene Dichloride
07.03	Wood, Pulp & Paper, & Publishing Products	0.00852	0.00000	1,883.80450	16.97406	0.00000	0.00000	0.00000
07.04	Rubber & Miscellaneous Plastic Products	0.13351	0.00002	1.07700	5.61051	0.00000	0.00000	0.00000
07.05	Mineral Products	5.32566	0.21177	0.11261	1.77837	0.00000	0.42622	0.00000
07.06	Machinery Products	0.03468	0.00000	0.12200	16.94066	0.00000	0.00000	0.00000
07.07	Electronic Equipment	0.01236	0.00000	0.00602	0.67051	0.00000	0.00000	0.00000
07.08	Transportation Equipment	0.50250	0.01614	0.24048	8.73300	0.00000	0.00000	0.00000
07.09	Construction	0.00000	0.00000	0.00000	0.12500	0.00000	0.00000	0.00000
07.10	Miscellaneous Industrial Processes	6.05586	3.33463	17.60568	155.28152	0.00000	0.06975	195.00000
08	SOLVENT UTILIZATION	0.91489	0.43361	7.04926	51.91006	0.00000	4.97356	0.00000
08.00	MACT Categories	0.76562	0.10310	3.49434	50.82879	0.00000	4.97356	0.00000
08.01	Degreasing	0.00050	0.02528	2.35826	0.00134	0.00000	0.00000	0.00000
08.02	Graphic Arts	0.12571	0.00000	0.00000	0.00414	0.00000	0.00000	0.00000
08.03	Dry Cleaning	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
08.04	Surface Coating	0.00592	0.30522	0.15515	1.03479	0.00000	0.00000	0.00000
08.05	Other Industrial	0.01713	0.00000	1.04151	0.04100	0.00000	0.00000	0.00000
08.06	Nonindustrial	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09	STORAGE & TRANSPORT	0.08872	1.68034	1.76505	0.11269	0.00000	1.79958	0.00000
09.00	MACT Categories	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09.01	Bulk Terminals & Plants	0.00000	0.00000	0.09500	0.00000	0.00000	0.00182	0.00000
09.02	Petroleum & Petroleum Product Storage	0.00000	0.00000	0.02051	0.00000	0.00000	0.03503	0.00000
09.03	Petroleum & Petroleum Product Transport	0.00000	0.10966	0.41000	0.00000	0.00000	0.06822	0.00000
09.04	Service Stations: Stage I	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000
09.05	Service Stations: Stage II	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000
09.06	Service Stations: Breathing & Emptying	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09.07	Organic Chemical Storage	0.00000	0.01919	0.74355	0.00003	0.00000	0.01450	0.00000
09.08	Organic Chemical Transport	0.00000	0.00000	0.34600	0.00000	0.00000	0.00000	0.00000
09.09	Inorganic Chemical Storage	0.00000	1.45150	0.00000	0.00000	0.00000	0.00000	0.00000
09.11	Bulk Materials Storage	0.08872	0.00000	0.00000	0.11267	0.00000	0.00000	0.00000
10	WASTE DISPOSAL & RECYCLING	24.37846	70.03906	409.65664	12.39676	0.00000	3.42732	24.04231
10.00	MACT Categories	24.37706	68.90418	408.02951	11.89049	0.00000	0.03851	24.04227
10.01	Incineration	0.00102	0.00014	0.00000	0.00036	0.00000	0.00000	0.00000
10.02	Open Burning	0.00004	0.00000	0.00000	0.00202	0.00000	0.00000	0.00000
10.04	Industrial Waste Water	0.00000	0.00351	0.42605	0.00000	0.00000	0.00347	0.00000
10.05	TSDF	0.00019	0.00382	0.22886	0.00383	0.00000	0.00382	0.00003
10.06	Landfills	0.00000	1.12741	0.95488	0.00000	0.00000	3.38152	0.00000
10.07	Other	0.00015	0.00000	0.00000	0.50007	0.00000	0.00000	0.00000
11	HIGHWAY VEHICLES	0.02668	0.00000	0.00000	27.93068	0.00000	0.00000	0.00000
12	OFF-HIGHWAY	0.31011	0.00000	0.00000	25.83012	0.00000	0.00000	0.00000
13	NATURAL SOURCES	0.00003	0.00000	0.00000	0.00038	0.00000	0.00000	0.00000
13.02	Geogenic	0.00003	0.00000	0.00000	0.00038	0.00000	0.00000	0.00000
14	MISCELLANEOUS	0.14613	0.12523	124.09405	0.41570	936.96000	0.00000	0.00000
14.01	Agriculture & Forestry	0.00057	0.00000	0.00000	0.00317	0.00000	0.00000	0.00000

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Cadmium Compounds	Carbon Tetrachloride	Chloroform	Chromium Compounds	Coke Oven Emissions	Ethylene Dibromide	Propylene Dichloride
14.02	Other Combustion	0.00000	0.00000	0.00000	0.13824	0.00000	0.00000	0.00000
14.03	Catastrophic/Accidental Releases	0.00000	0.00000	0.00000	0.00000	936.96000	0.00000	0.00000
14.04	Repair Shops	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14.05	Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14.06	Cooling Towers	0.01072	0.00000	0.34926	0.03563	0.00000	0.00000	0.00000
14.07	Fugitive Dust	0.00779	0.00000	0.00000	0.10209	0.00000	0.00000	0.00000
14.21	Consumer Products Usage	0.00000	0.00005	123.23574	0.00000	0.00000	0.00000	0.00000
14.40	Transportation & Public Utilities	0.00000	0.00000	0.00776	0.00000	0.00000	0.00000	0.00000
14.70	Services	0.12705	0.12518	0.12786	0.13407	0.00000	0.00000	0.00000
14.98	Miscellaneous Categories	0.00000	0.00000	0.37342	0.00250	0.00000	0.00000	0.00000

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		1,3- Dichloropropene	Ethylene Dichloride	Ethylene Oxide	Formaldehyde	Hexachlorobenzene	Hydrazine	Lead Compounds
01	FUEL COMB. ELEC. UTIL.	0.00000	27.02126	0.00000	198.76632	0.00000	0.00000	87.08918
01.00	MACT Categories (Utility Study)	0.00000	27.01860	0.00000	184.03877	0.00000	0.00000	84.79815
01.03	Gas	0.00000	0.00000	0.00000	3.94117	0.00000	0.00000	0.00000
01.04	Other	0.00000	0.00000	0.00000	2.45448	0.00000	0.00000	0.02569
01.05	Internal Combustion	0.00000	0.00266	0.00000	8.33191	0.00000	0.00000	2.26534
02	FUEL COMB. INDUSTRIAL	0.00000	0.81934	0.00000	26,223.73958	0.00010	0.00000	30.14759
02.00	MACT Categories	0.00000	0.81934	0.00000	26,180.75588	0.00001	0.00000	29.95608
02.01	Coal	0.00000	0.00000	0.00000	0.63555	0.00000	0.00000	0.09787
02.02	Oil	0.00000	0.00000	0.00000	1.62310	0.00000	0.00000	0.05826
02.03	Gas	0.00000	0.00000	0.00000	15.75798	0.00000	0.00000	0.01571
02.04	Other	0.00000	0.00000	0.00000	0.20191	0.00010	0.00000	0.01264
02.05	Internal Combustion	0.00000	0.00000	0.00000	24.76516	0.00000	0.00000	0.00702
03	FUEL COMB. OTHER	0.00000	0.13473	0.00000	685.19718	0.00002	0.10511	17.83845
03.00	MACT Categories	0.00000	0.08146	0.00000	222.79075	0.00000	0.00000	5.80823
03.02	Commercial/Institutional Oil	0.00000	0.00000	0.00000	1.51566	0.00000	0.00000	0.01901
03.03	Commercial/Institutional Gas	0.00000	0.00007	0.00000	20.38024	0.00000	0.00000	0.00052
03.04	Misc. Fuel Comb. (Except Residential)	0.00000	0.00000	0.00000	24.44219	0.00002	0.10511	0.10084
03.05	Residential Wood	0.00000	0.00000	0.00000	137.75778	0.00000	0.00000	7.54084
03.06	Residential Other	0.00000	0.05320	0.00000	278.31056	0.00000	0.00000	4.36900
04	CHEMICAL & ALLIED PRODUCT MFG	30.29300	2,898.72120	949.76887	3,285.17222	1.43850	15.51250	181.47978
04.00	MACT Categories	5.54750	1,680.60753	454.24307	2,398.51766	0.16700	5.61400	6.97896
04.01	Organic Chemicals	22.75000	1,092.08619	329.40205	781.28034	0.27550	3.16350	1.35850
04.02	Inorganic Chemicals	1.56500	0.00100	90.79500	16.75771	0.00000	6.32250	151.78850
04.03	Polymers & Resins	0.00000	0.00000	0.00000	1.55751	0.00000	0.00000	0.00270
04.04	Agricultural Chemicals	0.43050	92.70850	0.01750	32.60120	0.41500	0.39950	1.63300
04.05	Paints, Varnishes, Lacquers, Enamels	0.00000	0.00031	0.00000	5.15854	0.00000	0.00000	16.37704
04.06	Pharmaceuticals	0.00000	0.01500	0.00000	0.00000	0.00000	0.00000	0.00000
04.07	Other Chemicals	0.00000	24.30418	54.90425	24.33877	0.58100	0.00000	2.17059
05	METALS PROCESSING	0.78700	0.00190	0.00000	134.38944	0.00000	0.50250	839.68597
05.00	MACT Categories	0.78700	0.00190	0.00000	113.89825	0.00000	0.00000	608.49312
05.01	Nonferrous Metals Processing	0.00000	0.00000	0.00000	1.69118	0.00000	0.00000	117.67273
05.02	Ferrous Metals Processing	0.00000	0.00000	0.00000	17.80012	0.00000	0.00250	111.43993
05.03	Metals Processing NEC	0.00000	0.00000	0.00000	0.99990	0.00000	0.50000	2.08020
06	PETROLEUM & RELATED INDUSTRIES	0.00000	91.81822	9.11563	753.11352	0.00000	3.28905	47.17316
06.00	MACT Categories	0.00000	0.00004	0.00000	641.86998	0.00000	0.00000	19.75903
06.01	Oil & Gas Production	0.00000	0.00426	0.00713	13.59667	0.00000	0.00355	0.00063
06.02	Petroleum Refineries & Related Industries	0.00000	91.80292	9.10850	96.72015	0.00000	3.28550	24.15977
06.03	Asphalt Manufacturing	0.00000	0.01100	0.00000	0.92671	0.00000	0.00000	3.25372
07	OTHER INDUSTRIAL PROCESSES	0.00000	1,105.11616	585.64322	9,829.56747	0.00001	0.63904	552.67951
07.00	MACT Categories	0.00000	477.59950	304.90950	8,274.44728	0.00000	0.00000	166.22812
07.01	Agriculture, Food, & Kindred Products	0.00000	0.00024	37.80576	6.67127	0.00000	0.00000	0.19792
07.02	Textiles, Leather, & Apparel Products	0.00000	0.00247	0.00000	14.69051	0.00000	0.00000	0.25021

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		1,3- Dichloropropene	Ethylene Dichloride	Ethylene Oxide	Formaldehyde	Hexachlorobenzene	Hydrazine	Lead Compounds
07.03	Wood, Pulp & Paper, & Publishing Products	0.00000	0.00027	0.00000	656.72680	0.00000	0.00000	0.09095
07.04	Rubber & Miscellaneous Plastic Products	0.00000	30.15000	72.69750	27.31086	0.00000	0.00000	11.10871
07.05	Mineral Products	0.00000	0.35566	0.00000	349.80365	0.00001	0.00000	1.97079
07.06	Machinery Products	0.00000	552.45550	41.50155	30.70440	0.00000	0.00000	4.04335
07.07	Electronic Equipment	0.00000	0.00000	20.31450	19.67500	0.00000	0.00000	6.28861
07.08	Transportation Equipment	0.00000	0.07281	0.00000	0.13040	0.00000	0.00000	6.04817
07.09	Construction	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
07.10	Miscellaneous Industrial Processes	0.00000	44.47970	108.41441	449.40730	0.00000	0.63904	356.45269
08	SOLVENT UTILIZATION	0.00000	16.42611	12.93591	733.66738	0.00000	0.31678	76.84471
08.00	MACT Categories	0.00000	16.10075	12.91973	720.39133	0.00000	0.31678	29.53012
08.01	Degreasing	0.00000	0.03292	0.00735	0.64807	0.00000	0.00000	0.03044
08.02	Graphic Arts	0.00000	0.00000	0.00000	1.55492	0.00000	0.00000	0.47462
08.03	Dry Cleaning	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
08.04	Surface Coating	0.00000	0.14259	0.00850	6.94803	0.00000	0.00000	46.72702
08.05	Other Industrial	0.00000	0.14985	0.00033	4.12502	0.00000	0.00000	0.08250
08.06	Nonindustrial	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09	STORAGE & TRANSPORT	0.00000	7.48812	0.03810	4.94350	0.00000	0.09795	4.82841
09.00	MACT Categories	0.00000	2.57000	0.00000	0.00000	0.00000	0.00000	0.13451
09.01	Bulk Terminals & Plants	0.00000	0.01531	0.00000	0.00000	0.00000	0.00000	0.00052
09.02	Petroleum & Petroleum Product Storage	0.00000	0.05158	0.00400	3.17495	0.00000	0.00000	0.00024
09.03	Petroleum & Petroleum Product Transport	0.00000	0.20591	0.00000	0.08388	0.00000	0.00000	0.52733
09.04	Service Stations: Stage I	0.00000	0.00005	0.00000	0.00008	0.00000	0.00000	0.00000
09.05	Service Stations: Stage II	0.00000	4.63016	0.00000	0.00000	0.00000	0.00000	0.03917
09.06	Service Stations: Breathing & Emptying	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09.07	Organic Chemical Storage	0.00000	0.01511	0.00000	0.98994	0.00000	0.09795	0.00073
09.08	Organic Chemical Transport	0.00000	0.00000	0.00000	0.00104	0.00000	0.00000	0.00000
09.09	Inorganic Chemical Storage	0.00000	0.00000	0.03410	0.00000	0.00000	0.00000	0.00025
09.11	Bulk Materials Storage	0.00000	0.00000	0.00000	0.67362	0.00000	0.00000	4.12566
10	WASTE DISPOSAL & RECYCLING	0.00000	50.46048	13.95000	27.75885	0.00004	0.00002	270.92826
10.00	MACT Categories	0.00000	47.08843	13.95000	26.13004	0.00000	0.00000	270.90760
10.01	Incineration	0.00000	0.00002	0.00000	0.03558	0.00004	0.00000	0.00959
10.02	Open Burning	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00847
10.04	Industrial Waste Water	0.00000	2.50549	0.00000	1.51330	0.00000	0.00002	0.00000
10.05	TSDF	0.00000	0.00001	0.00000	0.01628	0.00000	0.00000	0.00171
10.06	Landfills	0.00000	0.86653	0.00000	0.05385	0.00000	0.00000	0.00000
10.07	Other	0.00000	0.00000	0.00000	0.00979	0.00000	0.00000	0.00089
11	HIGHWAY VEHICLES	0.00000	0.00000	0.00000	96,816.50994	0.00000	0.00000	418.03935
12	OFF-HIGHWAY	0.00000	0.00000	0.00000	79,405.52602	0.00000	0.00000	778.25807
13	NATURAL SOURCES	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00019
13.02	Geogenic	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00019
14	MISCELLANEOUS	19,896.79000	0.59675	1,190.29814	129,228.16239	0.14600	0.00000	2.14997
14.01	Agriculture & Forestry	0.00000	0.00000	0.00000	0.00000	0.14600	0.00000	0.00166

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		1,3- Dichloropropene	Ethylene Dichloride	Ethylene Oxide	Formaldehyde	Hexachlorobenzene	Hydrazine	Lead Compounds
14.02	Other Combustion	0.00000	0.00000	0.00000	129,070.85857	0.00000	0.00000	0.01649
14.03	Catastrophic/Accidental Releases	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14.04	Repair Shops	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14.05	Health Services	0.00000	0.01600	1,190.27814	0.00260	0.00000	0.00000	0.00313
14.06	Cooling Towers	0.00000	0.00000	0.00000	0.00880	0.00000	0.00000	1.68964
14.07	Fugitive Dust	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15206
14.21	Consumer Products Usage	19,896.79000	0.57825	0.00000	156.68722	0.00000	0.00000	0.00000
14.40	Transportation & Public Utilities	0.00000	0.00000	0.02000	0.00000	0.00000	0.00000	0.00000
14.70	Services	0.00000	0.00250	0.00000	0.47769	0.00000	0.00000	0.28700
14.98	Miscellaneous Categories	0.00000	0.00000	0.00000	0.12750	0.00000	0.00000	0.00000

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Manganese Compounds	Mercury Compounds	Methylene Chloride	Nickel Compounds	Polychlorinated Biphenyls	Polycyclic Organic Matter	Quinoline
01	FUEL COMB. ELEC. UTIL.	192.16294	53.28055	119.63081	450.48274	0.00001	8.81088	0.00000
01.00	MACT Categories (Utility Study)	190.99779	52.08865	110.15984	448.74027	0.00000	8.81088	0.00000
01.03	Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
01.04	Other	0.29501	0.00919	0.00000	0.01400	0.00000	0.00000	0.00000
01.05	Internal Combustion	0.87014	1.18271	9.46816	1.72825	0.00001	0.00000	0.00000
02	FUEL COMB. INDUSTRIAL	547.20368	2.92661	9.09658	125.73762	0.00499	218.44557	0.00000
02.00	MACT Categories	536.69908	2.38456	7.03388	93.90579	0.00499	218.44557	0.00000
02.01	Coal	0.01076	0.12113	0.00000	0.01991	0.00000	0.00000	0.00000
02.02	Oil	5.28795	0.36289	0.00000	31.20463	0.00000	0.00000	0.00000
02.03	Gas	4.91574	0.05066	2.06270	0.32189	0.00000	0.00000	0.00000
02.04	Other	0.03269	0.00668	0.00000	0.00954	0.00000	0.00000	0.00000
02.05	Internal Combustion	0.00247	0.00070	0.00000	0.01837	0.00000	0.00000	0.00000
03	FUEL COMB. OTHER	245.54949	3.13193	1.39897	120.67300	0.00000	73.99793	0.00000
03.00	MACT Categories	26.25095	1.65077	0.59591	118.09507	0.00000	9.84268	0.00000
03.02	Commercial/Institutional Oil	0.01545	0.00107	0.00000	0.03374	0.00000	0.00000	0.00000
03.03	Commercial/Institutional Gas	0.00101	0.00002	0.41637	0.08466	0.00000	0.00000	0.00000
03.04	Misc. Fuel Comb. (Except Residential)	0.03569	0.01245	0.00068	0.46466	0.00000	0.00000	0.00000
03.05	Residential Wood	216.05439	0.08712	0.00000	0.35187	0.00000	59.20000	0.00000
03.06	Residential Other	3.19200	1.38050	0.38600	1.64300	0.00000	4.95525	0.00000
04	CHEMICAL & ALLIED PRODUCT MFG	222.08554	13.41729	45,291.70359	20.22190	0.00000	865.61650	12.49950
04.00	MACT Categories	33.48464	13.04158	42,792.32555	2.45846	0.00000	449.01850	12.49950
04.01	Organic Chemicals	3.92300	0.02000	1,120.04803	2.16100	0.00000	328.47250	0.00000
04.02	Inorganic Chemicals	161.43550	0.25500	290.61901	13.08670	0.00000	15.68550	0.00000
04.03	Polymers & Resins	0.00000	0.00000	0.02568	0.00000	0.00000	0.00000	0.00000
04.04	Agricultural Chemicals	13.04350	0.00000	176.04545	0.26000	0.00000	5.95800	0.00000
04.05	Paints, Varnishes, Lacquers, Enamels	0.14700	0.01286	230.10029	0.53149	0.00000	30.72450	0.00000
04.06	Pharmaceuticals	0.00000	0.00000	5.67350	0.00000	0.00000	0.00000	0.00000
04.07	Other Chemicals	0.12340	0.08785	437.91909	0.51325	0.00000	19.54550	0.00000
05	METALS PROCESSING	1,187.28718	3.45209	217.60550	88.27336	0.00000	1,947.12400	9.06150
05.00	MACT Categories	897.44454	2.08314	132.13300	27.06591	0.00000	1,897.91050	9.01600
05.01	Nonferrous Metals Processing	9.39394	1.11895	1.07500	24.85529	0.00000	4.55000	0.00000
05.02	Ferrous Metals Processing	268.92111	0.25000	77.59500	29.78217	0.00000	44.66350	0.04550
05.03	Metals Processing NEC	11.52759	0.00000	6.80250	6.56999	0.00000	0.00000	0.00000
06	PETROLEUM & RELATED INDUSTRIES	50.00145	1.46299	29.39032	111.05618	0.00000	1,317.14250	4.37950
06.00	MACT Categories	44.95142	1.41880	0.44280	96.25919	0.00000	1,183.30000	0.00000
06.01	Oil & Gas Production	0.00109	0.00011	0.52404	0.01669	0.00000	0.00000	0.00000
06.02	Petroleum Refineries & Related Industries	1.71606	0.01759	28.42349	14.71855	0.00000	133.84250	4.37950
06.03	Asphalt Manufacturing	3.33288	0.02649	0.00000	0.06174	0.00000	0.00000	0.00000
07	OTHER INDUSTRIAL PROCESSES	357.28506	10.53589	34,111.13747	253.55360	0.00943	1,288.75071	0.08500
07.00	MACT Categories	134.49120	6.11607	19,993.04737	18.84583	0.00002	839.55500	0.00000
07.01	Agriculture, Food, & Kindred Products	17.83476	0.01790	157.27200	0.33123	0.00000	0.00500	0.00000
07.02	Textiles, Leather, & Apparel Products	0.12202	0.00006	161.60232	0.62105	0.00000	4.49500	0.00000

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Manganese Compounds	Mercury Compounds	Methylene Chloride	Nickel Compounds	Polychlorinated Biphenyls	Polycyclic Organic Matter	Quinoline
07.03	Wood, Pulp & Paper, & Publishing Products	1.48555	0.01646	156.30500	1.60210	0.00000	97.07463	0.08500
07.04	Rubber & Miscellaneous Plastic Products	0.89752	0.12750	1,933.79475	0.53050	0.00000	153.94500	0.00000
07.05	Mineral Products	4.94522	1.36707	29.40403	0.92923	0.00360	2.83300	0.00000
07.06	Machinery Products	63.38068	0.00972	367.61153	26.45347	0.00000	1.03250	0.00000
07.07	Electronic Equipment	4.45400	0.88200	1,556.83564	2.93605	0.00000	0.00000	0.00000
07.08	Transportation Equipment	9.05351	0.00000	610.56981	10.48501	0.00031	14.21400	0.00000
07.09	Construction	0.12500	0.00000	0.00000	0.12500	0.00000	0.00000	0.00000
07.10	Miscellaneous Industrial Processes	120.49558	1.99911	9,144.69502	190.69414	0.00550	175.59658	0.00000
08	SOLVENT UTILIZATION	29.59095	0.01422	37,708.01972	35.68361	0.00014	2,038.45400	0.00000
08.00	MACT Categories	29.38422	0.01307	37,194.84156	35.23238	0.00000	2,028.02600	0.00000
08.01	Degreasing	0.09402	0.00004	116.62344	0.00194	0.00000	0.00000	0.00000
08.02	Graphic Arts	0.00001	0.00088	80.93048	0.00000	0.00014	10.42800	0.00000
08.03	Dry Cleaning	0.00000	0.00000	5.61650	0.00000	0.00000	0.00000	0.00000
08.04	Surface Coating	0.11269	0.00018	261.54303	0.44923	0.00000	0.00000	0.00000
08.05	Other Industrial	0.00000	0.00005	48.19188	0.00006	0.00000	0.00000	0.00000
08.06	Nonindustrial	0.00000	0.00000	0.27283	0.00000	0.00000	0.00000	0.00000
09	STORAGE & TRANSPORT	5.58907	0.05540	18.39548	0.14186	0.00102	729.08450	0.00000
09.00	MACT Categories	0.00000	0.00000	0.00000	0.00000	0.00000	354.51000	0.00000
09.01	Bulk Terminals & Plants	0.00000	0.00000	0.00000	0.00001	0.00000	0.57450	0.00000
09.02	Petroleum & Petroleum Product Storage	0.00023	0.00003	0.00310	0.01319	0.00000	0.00000	0.00000
09.03	Petroleum & Petroleum Product Transport	0.00000	0.00000	11.33791	0.00398	0.00000	0.00000	0.00000
09.04	Service Stations: Stage I	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09.05	Service Stations: Stage II	0.00000	0.00000	0.00000	0.00000	0.00000	374.00000	0.00000
09.06	Service Stations: Breathing & Emptying	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09.07	Organic Chemical Storage	0.00000	0.00005	4.02173	0.00000	0.00000	0.00000	0.00000
09.08	Organic Chemical Transport	0.00000	0.00000	1.42274	0.00000	0.00000	0.00000	0.00000
09.09	Inorganic Chemical Storage	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
09.11	Bulk Materials Storage	5.58884	0.05533	0.00000	0.12468	0.00102	0.00000	0.00000
10	WASTE DISPOSAL & RECYCLING	11.72747	103.12032	2,125.70399	28.06791	0.03399	97.94350	0.00000
10.00	MACT Categories	11.60955	101.54027	2,087.15277	27.55146	0.03339	97.94350	0.00000
10.01	Incineration	0.02441	0.07402	0.00060	0.00630	0.00060	0.00000	0.00000
10.02	Open Burning	0.00254	0.00000	0.00000	0.00159	0.00000	0.00000	0.00000
10.04	Industrial Waste Water	0.00000	0.00000	0.19973	0.00000	0.00000	0.00000	0.00000
10.05	TSDF	0.08076	0.00000	0.01694	0.00809	0.00000	0.00000	0.00000
10.06	Landfills	0.00000	0.00000	38.33363	0.00000	0.00000	0.00000	0.00000
10.07	Other	0.01020	1.50602	0.00001	0.50047	0.00000	0.00000	0.00000
11	HIGHWAY VEHICLES	21.68763	4.96458	0.00000	15.54908	0.00000	75.93000	0.00000
12	OFF-HIGHWAY	30.34058	6.93002	16.90000	79.33141	0.00000	33.29000	0.00000
13	NATURAL SOURCES	0.00210	1.30002	0.00000	0.00011	0.00000	0.00000	0.00000
13.02	Geogenic	0.00210	1.30002	0.00000	0.00011	0.00000	0.00000	0.00000
14	MISCELLANEOUS	8.40762	1.36043	4,636.51936	0.75751	0.00000	8,570.59160	0.00000
14.01	Agriculture & Forestry	0.01889	0.00021	0.00000	0.00104	0.00000	0.00000	0.00000

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs						
		Manganese Compounds	Mercury Compounds	Methylene Chloride	Nickel Compounds	Polychlorinated Biphenyls	Polycyclic Organic Matter	Quinoline
14.02	Other Combustion	0.00236	0.00000	0.00000	0.12900	0.00000	2,837.82500	0.00000
14.03	Catastrophic/Accidental Releases	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
14.04	Repair Shops	0.00000	0.00000	7.50000	0.00000	0.00000	0.00000	0.00000
14.05	Health Services	0.12500	0.00000	0.13550	0.00000	0.00000	0.00000	0.00000
14.06	Cooling Towers	7.51104	0.30045	0.00000	0.07012	0.00000	0.00000	0.00000
14.07	Fugitive Dust	0.73113	0.00498	0.00000	0.04692	0.00000	0.00000	0.00000
14.21	Consumer Products Usage	0.00000	0.00000	4,562.11623	0.00000	0.00000	5,732.76260	0.00000
14.40	Transportation & Public Utilities	0.00000	0.00000	17.00000	0.00000	0.00000	0.00000	0.00000
14.70	Services	0.01670	1.05479	40.23963	0.25792	0.00000	0.00400	0.00000
14.98	Miscellaneous Categories	0.00250	0.00000	9.52800	0.25250	0.00000	0.00000	0.00000

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs				
		2,3,7- Tetrachlorodibenzo-p- dioxin	1,1,2,2- Tetrachloroethane	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride
01	FUEL COMB. ELEC. UTIL.	0.00011	0.00000	27.50444	0.19297	0.08442
01.00	MACT Categories (Utility Study)	0.00011	0.00000	27.02311	0.00073	0.00169
01.03	Gas	0.00000	0.00000	0.00000	0.00000	0.00000
01.04	Other	0.00000	0.00000	0.00000	0.00000	0.00000
01.05	Internal Combustion	0.00000	0.00000	0.48133	0.19224	0.08274
02	FUEL COMB. INDUSTRIAL	0.00009	0.00000	1.29597	7.53408	0.68360
02.00	MACT Categories	0.00009	0.00000	0.82278	1.11300	0.56920
02.01	Coal	0.00000	0.00000	0.00000	0.00000	0.00000
02.02	Oil	0.00000	0.00000	0.00000	0.00000	0.00000
02.03	Gas	0.00000	0.00000	0.47306	0.15108	0.11437
02.04	Other	0.00000	0.00000	0.00012	0.00000	0.00003
02.05	Internal Combustion	0.00000	0.00000	0.00000	0.00000	0.00000
03	FUEL COMB. OTHER	0.00004	0.00000	0.38331	0.73649	0.05934
03.00	MACT Categories	0.00000	0.00000	0.08760	0.00000	0.00000
03.02	Commercial/Institutional Oil	0.00000	0.00000	0.00000	0.00012	0.00000
03.03	Commercial/Institutional Gas	0.00000	0.00000	0.23748	0.06542	0.05933
03.04	Misc. Fuel Comb. (Except Residential)	0.00000	0.00000	0.00104	0.67095	0.00001
03.05	Residential Wood	0.00004	0.00000	0.00000	0.00000	0.00000
03.06	Residential Other	0.00000	0.00000	0.05720	0.00000	0.00000
04	CHEMICAL & ALLIED PRODUCT MFG	0.00000	17.78800	668.97825	383.98201	2,154.41688
04.00	MACT Categories	0.00000	0.82850	136.77345	239.14615	2,034.06416
04.01	Organic Chemicals	0.00000	16.95450	401.75783	136.12234	92.97800
04.02	Inorganic Chemicals	0.00000	0.00000	1.90333	0.59952	0.00000
04.03	Polymers & Resins	0.00000	0.00000	0.00000	0.00000	0.00000
04.04	Agricultural Chemicals	0.00000	0.00000	61.15000	1.03650	0.65650
04.05	Paints, Varnishes, Lacquers, Enamels	0.00000	0.00000	1.77812	1.01450	0.00002
04.06	Pharmaceuticals	0.00000	0.00000	0.00000	0.00000	0.00000
04.07	Other Chemicals	0.00000	0.00000	43.31002	3.77800	0.00519
05	METALS PROCESSING	0.00020	0.51700	396.59375	952.72172	0.00000
05.00	MACT Categories	0.00001	0.51700	184.25175	243.57250	0.00000
05.01	Nonferrous Metals Processing	0.00019	0.00000	153.54200	98.80000	0.00000
05.02	Ferrous Metals Processing	0.00000	0.00000	16.20450	456.24000	0.00000
05.03	Metals Processing NEC	0.00000	0.00000	42.59550	154.10923	0.00000
06	PETROLEUM & RELATED INDUSTRIES	0.00000	0.01850	17.88168	67.64605	4.65101
06.00	MACT Categories	0.00000	0.00000	0.00000	1.27500	0.00000
06.01	Oil & Gas Production	0.00000	0.00000	0.56970	19.59000	0.00000
06.02	Petroleum Refineries & Related Industries	0.00000	0.01850	17.31199	46.78105	4.65101
06.03	Asphalt Manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000
07	OTHER INDUSTRIAL PROCESSES	0.00007	11.32150	6,857.57749	12,332.57601	16.80269
07.00	MACT Categories	0.00004	6.32050	1,092.73435	1,195.33839	9.50675
07.01	Agriculture, Food, & Kindred Products	0.00000	0.00000	0.00000	0.00000	0.00097
07.02	Textiles, Leather, & Apparel Products	0.00000	0.00000	23.70500	30.17000	0.00000

Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs				
		2,3,7,8- Tetrachlorodibenzo-p- dioxin	1,1,2,2- Tetrachloroethane	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride
07.03	Wood, Pulp & Paper, & Publishing Products	0.00003	0.00000	25.21850	39.92000	0.00000
07.04	Rubber & Miscellaneous Plastic Products	0.00000	5.00000	364.65219	377.30614	7.20065
07.05	Mineral Products	0.00000	0.00100	0.40136	475.31225	0.00013
07.06	Machinery Products	0.00000	0.00000	396.10185	310.68200	0.00000
07.07	Electronic Equipment	0.00000	0.00000	466.42138	895.17700	0.00000
07.08	Transportation Equipment	0.00000	0.00000	517.04844	695.87868	0.00000
07.09	Construction	0.00000	0.00000	0.00000	0.00000	0.00000
07.10	Miscellaneous Industrial Processes	0.00000	0.00000	3,971.29441	8,312.79155	0.09419
08	SOLVENT UTILIZATION	0.00000	0.00000	115,418.70645	57,683.51050	0.61149
08.00	MACT Categories	0.00000	0.00000	112,832.57270	57,541.69178	0.60908
08.01	Degreasing	0.00000	0.00000	22.53234	2.02712	0.00000
08.02	Graphic Arts	0.00000	0.00000	75.97817	27.26150	0.00000
08.03	Dry Cleaning	0.00000	0.00000	2,172.05504	0.00002	0.00000
08.04	Surface Coating	0.00000	0.00000	314.75481	111.53614	0.00241
08.05	Other Industrial	0.00000	0.00000	0.81338	0.99394	0.00000
08.06	Nonindustrial	0.00000	0.00000	0.00000	0.00000	0.00000
09	STORAGE & TRANSPORT	0.00000	0.00000	17.23776	3.69705	0.00001
09.00	MACT Categories	0.00000	0.00000	0.00000	0.00000	0.00000
09.01	Bulk Terminals & Plants	0.00000	0.00000	0.00000	0.00000	0.00000
09.02	Petroleum & Petroleum Product Storage	0.00000	0.00000	0.00000	0.00580	0.00000
09.03	Petroleum & Petroleum Product Transport	0.00000	0.00000	4.88874	2.17649	0.00000
09.04	Service Stations: Stage I	0.00000	0.00000	2.62625	0.00000	0.00000
09.05	Service Stations: Stage II	0.00000	0.00000	0.00000	0.00000	0.00000
09.06	Service Stations: Breathing & Emptying	0.00000	0.00000	0.00000	0.00000	0.00000
09.07	Organic Chemical Storage	0.00000	0.00000	0.68403	1.29631	0.00001
09.08	Organic Chemical Transport	0.00000	0.00000	9.03874	0.16845	0.00000
09.09	Inorganic Chemical Storage	0.00000	0.00000	0.00000	0.00000	0.00000
09.11	Bulk Materials Storage	0.00000	0.00000	0.00000	0.00000	0.00000
10	WASTE DISPOSAL & RECYCLING	0.00194	218.92334	1,000.83989	455.64005	534.77648
10.00	MACT Categories	0.00194	218.92334	980.95980	446.59199	527.89334
10.01	Incineration	0.00000	0.00000	0.00001	0.00000	0.00001
10.02	Open Burning	0.00000	0.00000	0.00000	0.00000	0.00000
10.04	Industrial Waste Water	0.00000	0.00000	0.09646	0.00850	0.00055
10.05	TSDF	0.00000	0.00000	0.16628	0.09501	0.00000
10.06	Landfills	0.00000	0.00000	19.61733	8.94453	6.88258
10.07	Other	0.00000	0.00000	0.00000	0.00001	0.00000
11	HIGHWAY VEHICLES	0.00009	0.00000	9.50000	0.00000	0.00000
12	OFF-HIGHWAY	0.00000	0.00000	77.40000	0.00000	0.00000
13	NATURAL SOURCES	0.00000	0.00000	0.00000	0.00000	0.00000
13.02	Geogenic	0.00000	0.00000	0.00000	0.00000	0.00000
14	MISCELLANEOUS	0.00009	0.00000	3,506.81301	110.41250	0.00000
14.01	Agriculture & Forestry	0.00000	0.00000	0.00000	0.00000	0.00000

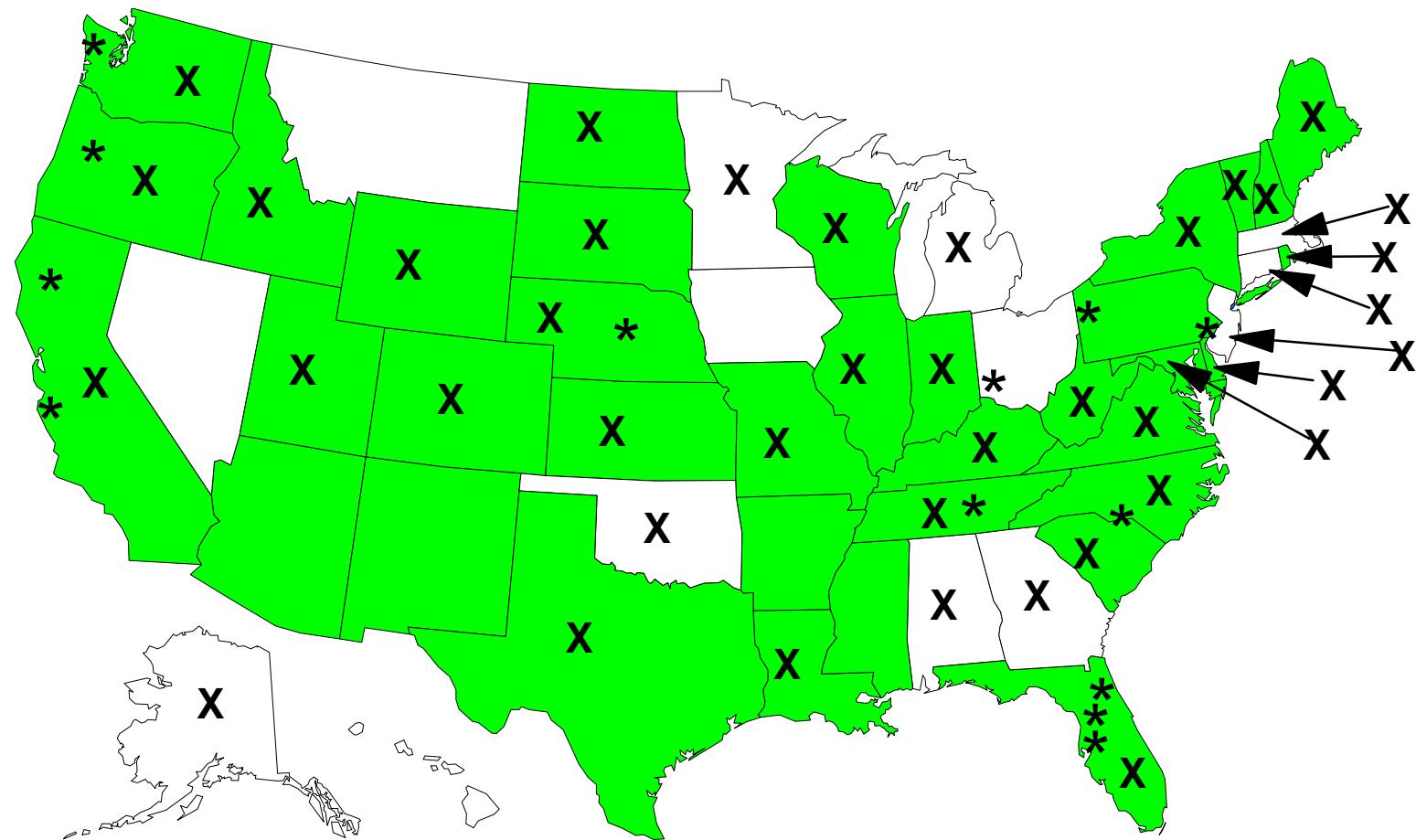
Table 7-8 (continued)

Tier Level Number	Tier Level Description	Emissions (tpy) for 33 Urban HAPs				
		2,3,7,8- Tetrachlorodibenzo-p- dioxin	1,1,2,2- Tetrachloroethane	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride
14.02	Other Combustion	0.00009	0.00000	0.00000	0.00000	0.00000
14.03	Catastrophic/Accidental Releases	0.00000	0.00000	0.00000	0.00000	0.00000
14.04	Repair Shops	0.00000	0.00000	0.00000	0.00000	0.00000
14.05	Health Services	0.00000	0.00000	0.00000	0.00000	0.00000
14.06	Cooling Towers	0.00000	0.00000	0.00000	0.00000	0.00000
14.07	Fugitive Dust	0.00000	0.00000	0.00000	0.00000	0.00000
14.21	Consumer Products Usage	0.00000	0.00000	3,506.80921	60.43650	0.00000
14.40	Transportation & Public Utilities	0.00000	0.00000	0.00380	0.00150	0.00000
14.70	Services	0.00000	0.00000	0.00000	38.42500	0.00000
14.98	Miscellaneous Categories	0.00000	0.00000	0.00000	11.54950	0.00000

Note(s): EPA uses a data base to store these emissions. Since the data base stores very large and very small amounts, the number of decimal places displayed are an artifact of that storage and are not intended to suggest true precision of large values.

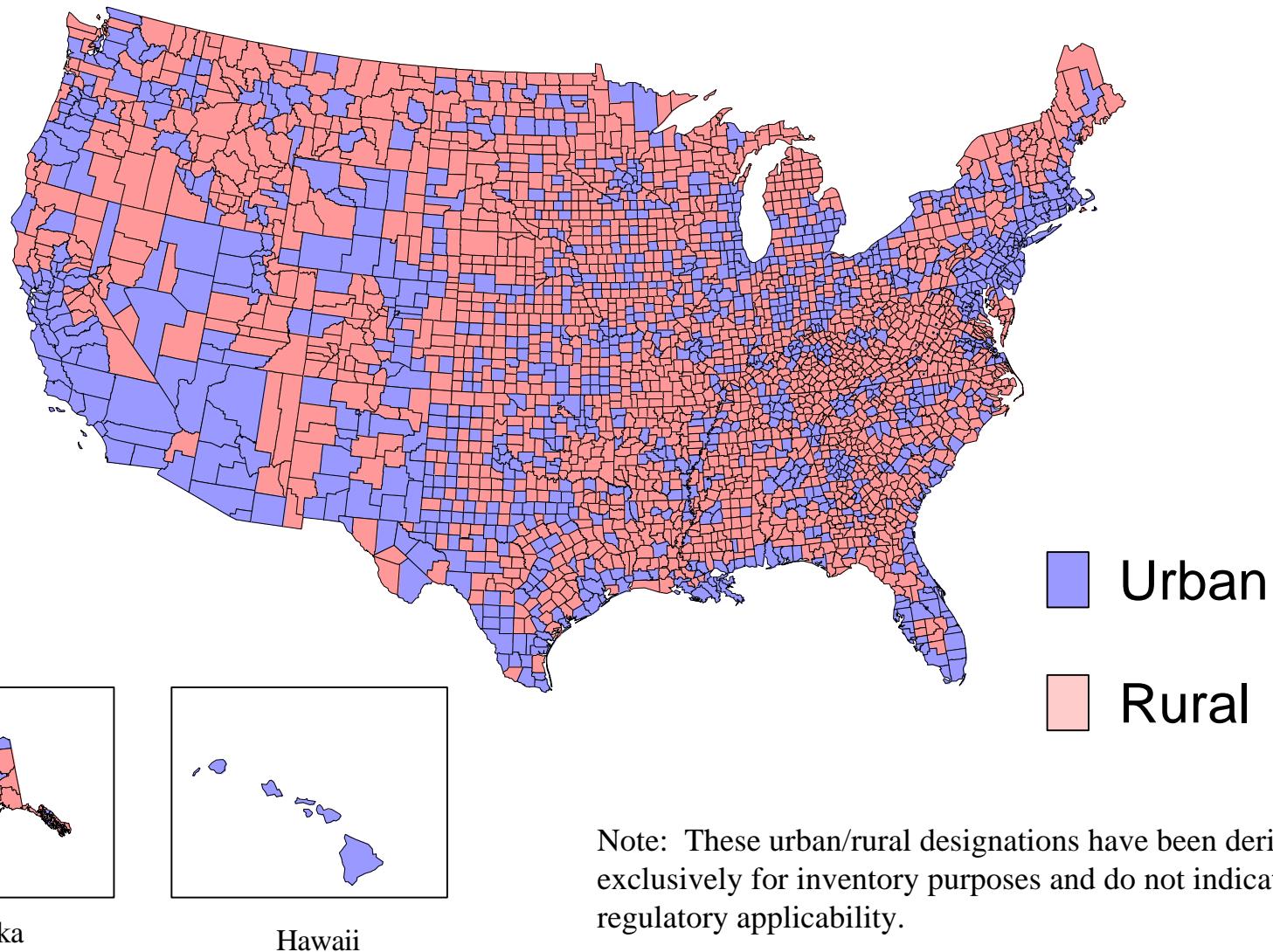
The estimates included in these tables have uncertainties and will improve/change as better data and estimation techniques become available over time.

Figure 7-1. 1996 NTI State Data Summary



Green - states who submitted HAP inventory data
X - states who submitted revisions by 9/1/99
* - local agencies who submitted revisions by 9/1/99

Figure 7-2. U.S. Counties by Urban and Rural Designation



**Figure 7-3. Baseline NTI (1990 to 1993)
National Emissions by Urban vs. Rural**

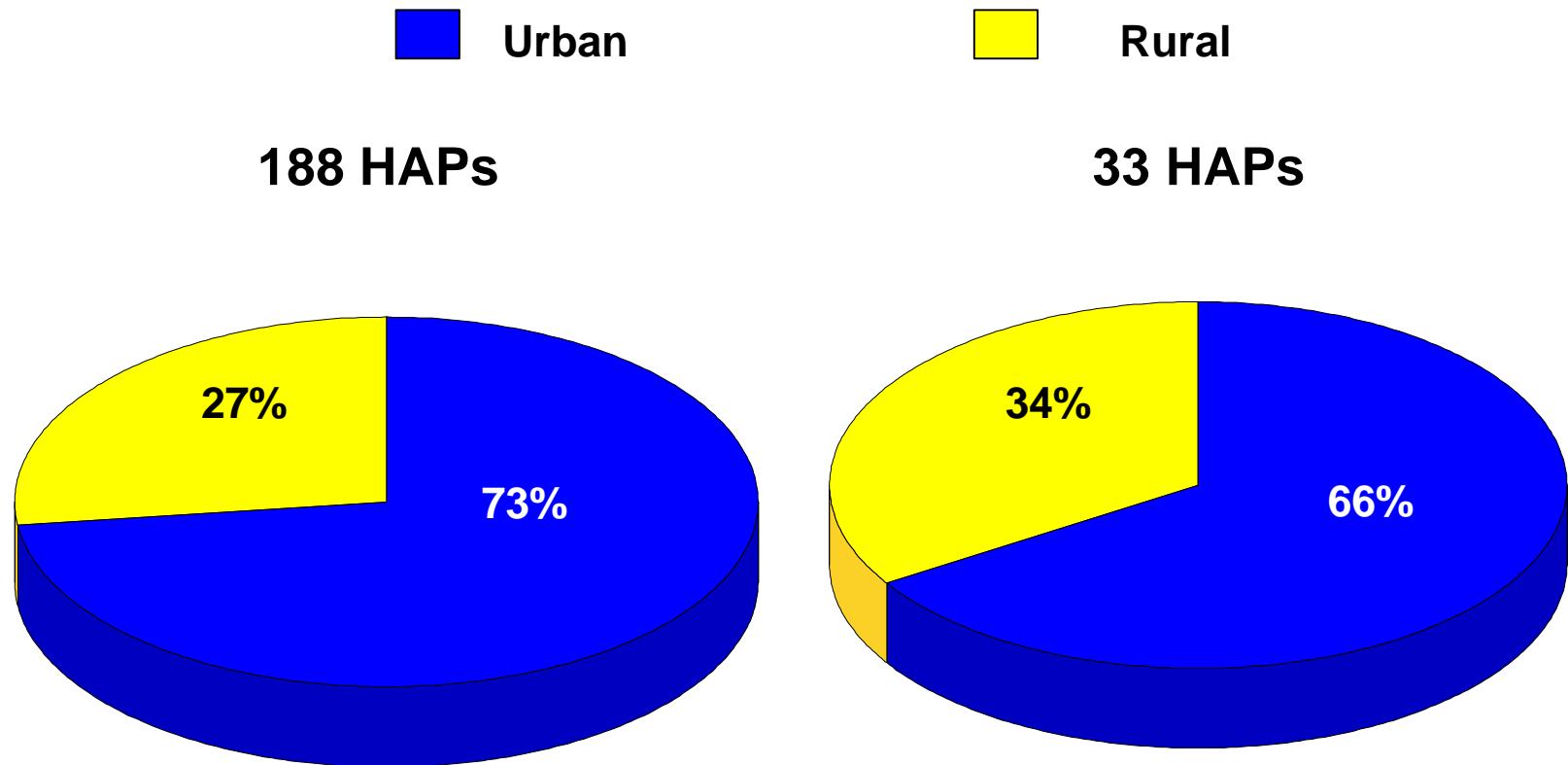
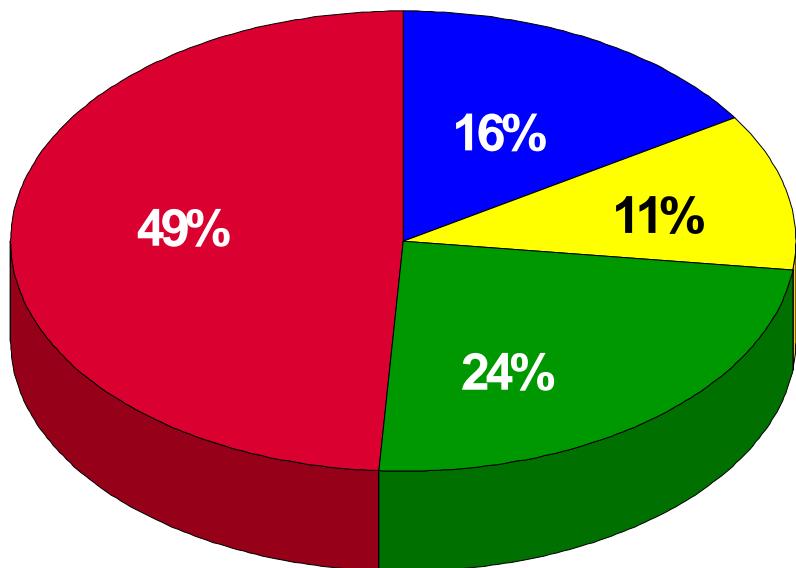


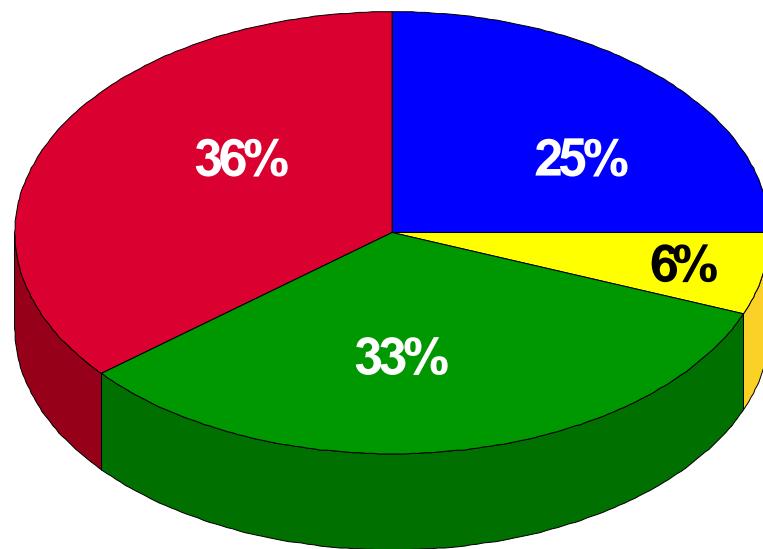
Figure 7-4. Baseline NTI (1990 to 1993)
National Emissions of 188 HAPs by Urban vs. Rural

■ Major ■ Area ■ Nonroad ■ On Road

Urban



Rural

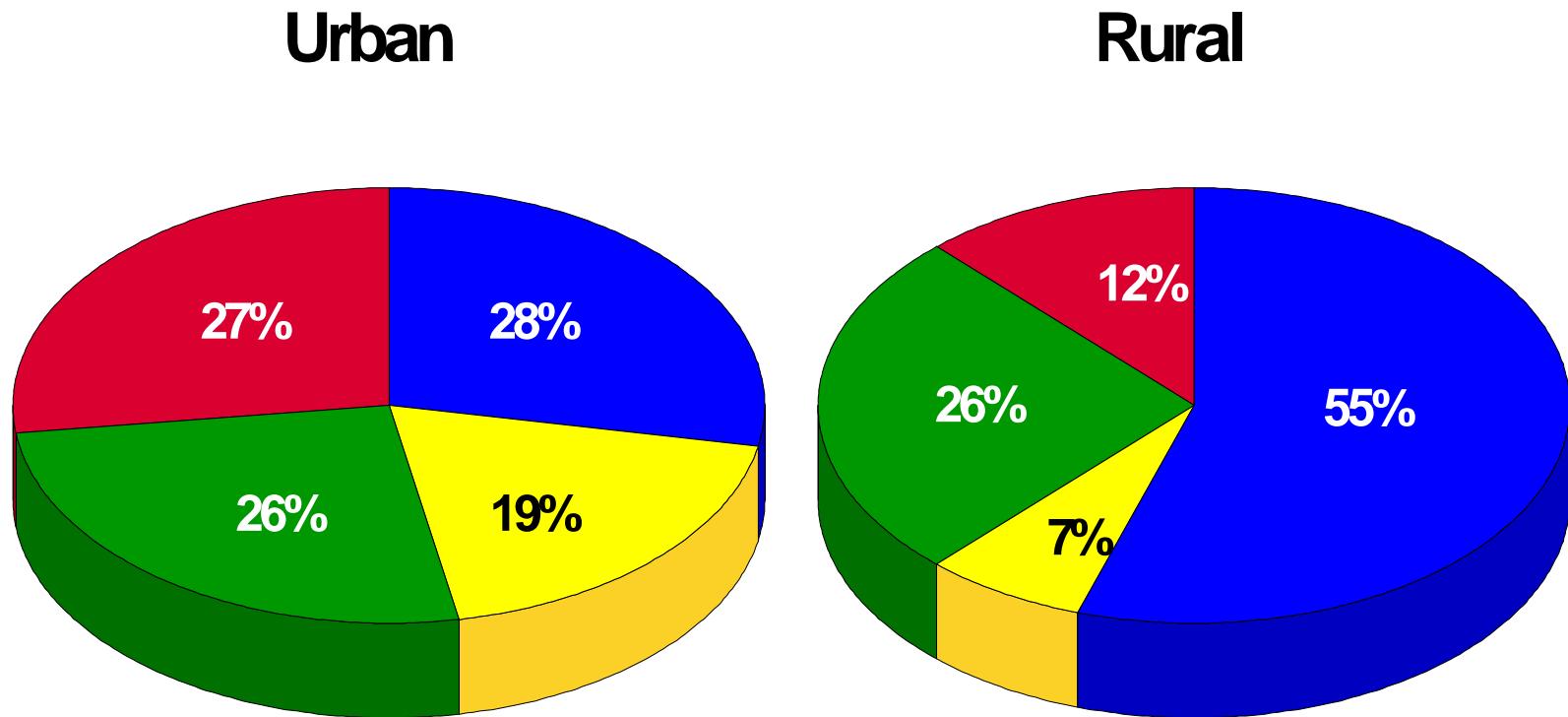


Total urban emissions are ~ 4,330,000 tons
73% of the total

Total rural emissions are ~ 1,580,000
27% of the total

Figure 7-5. Baseline NTI (1990 to 1993)
National Emissions of 33 HAPs by Urban vs. Rural

Point Area Nonroad On Road



Total urban emissions are ~ 943,000 tons
66% of the total

Total rural emissions are ~ 480,000 tons
34% of the total

**Figure 7-6. Baseline NTI (1990 to 1993)
188 HAP Emissions by State and Source Sector**

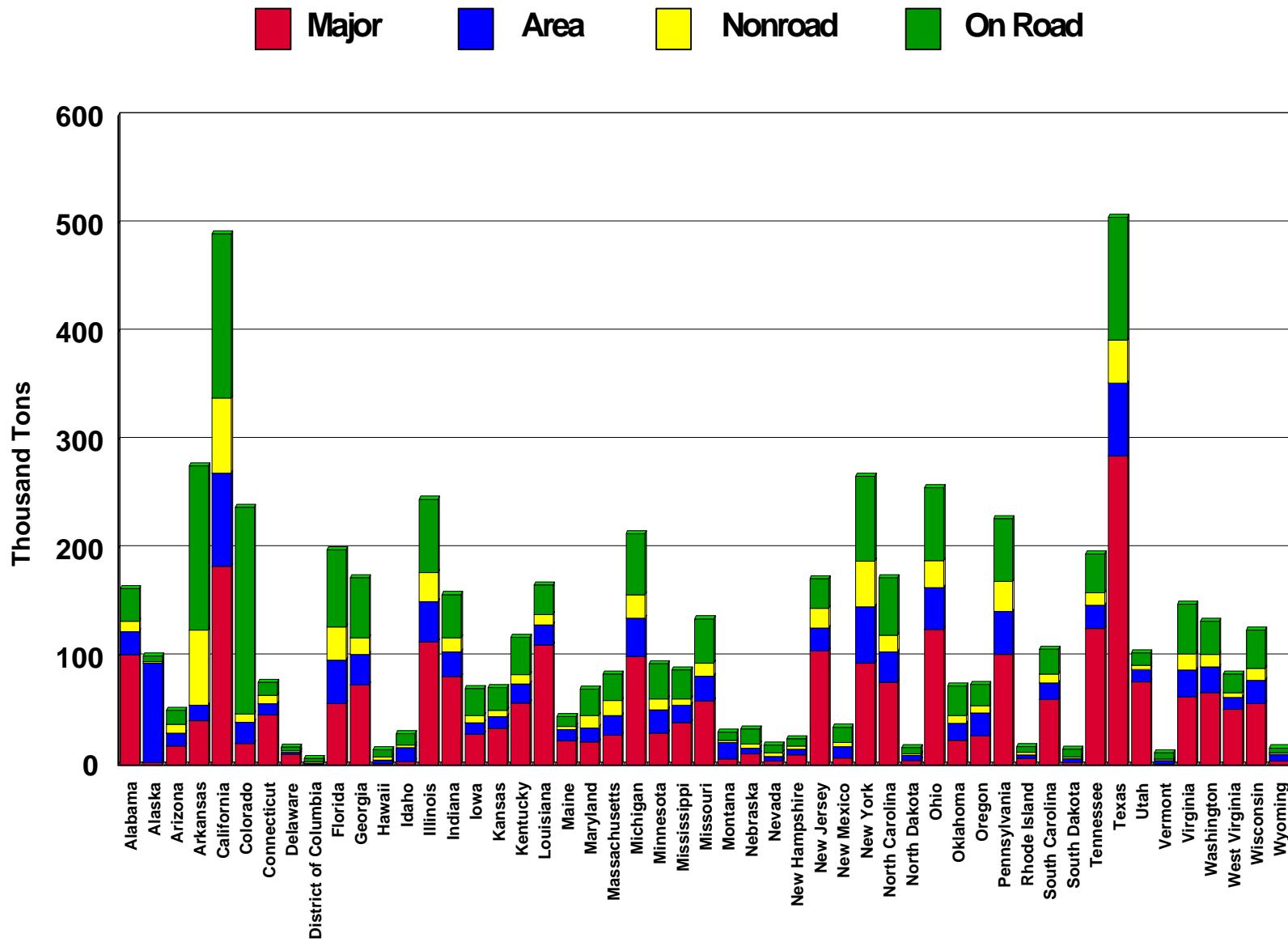


Figure 7-7. Baseline NTI (1990 to 1993)
33 HAP Emissions by State and Source Sector

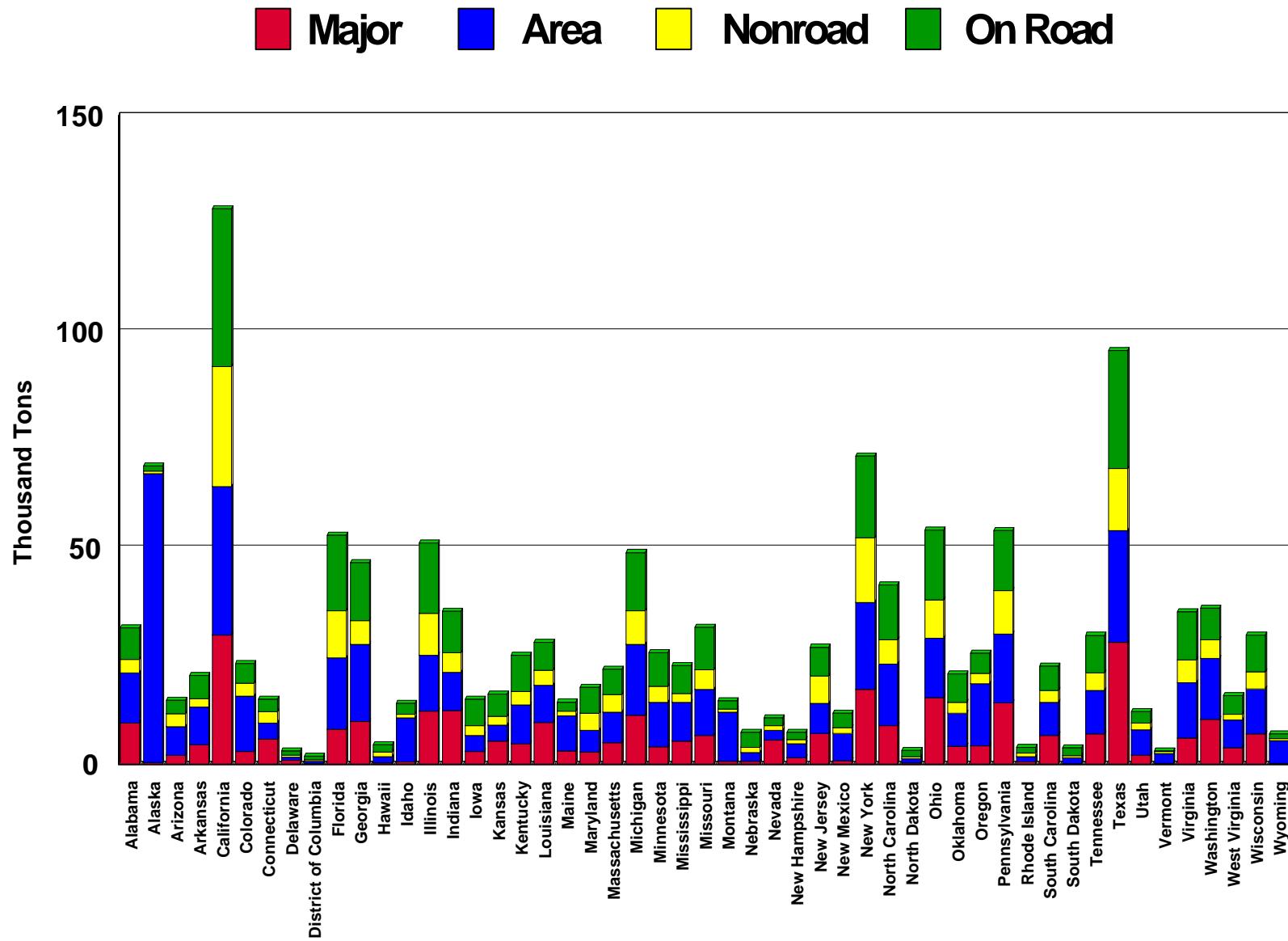


Figure 7-8. Summed Baseline NTI (1990 to 1993) Emissions of 188 HAPs per Square Mile for U.S. Counties

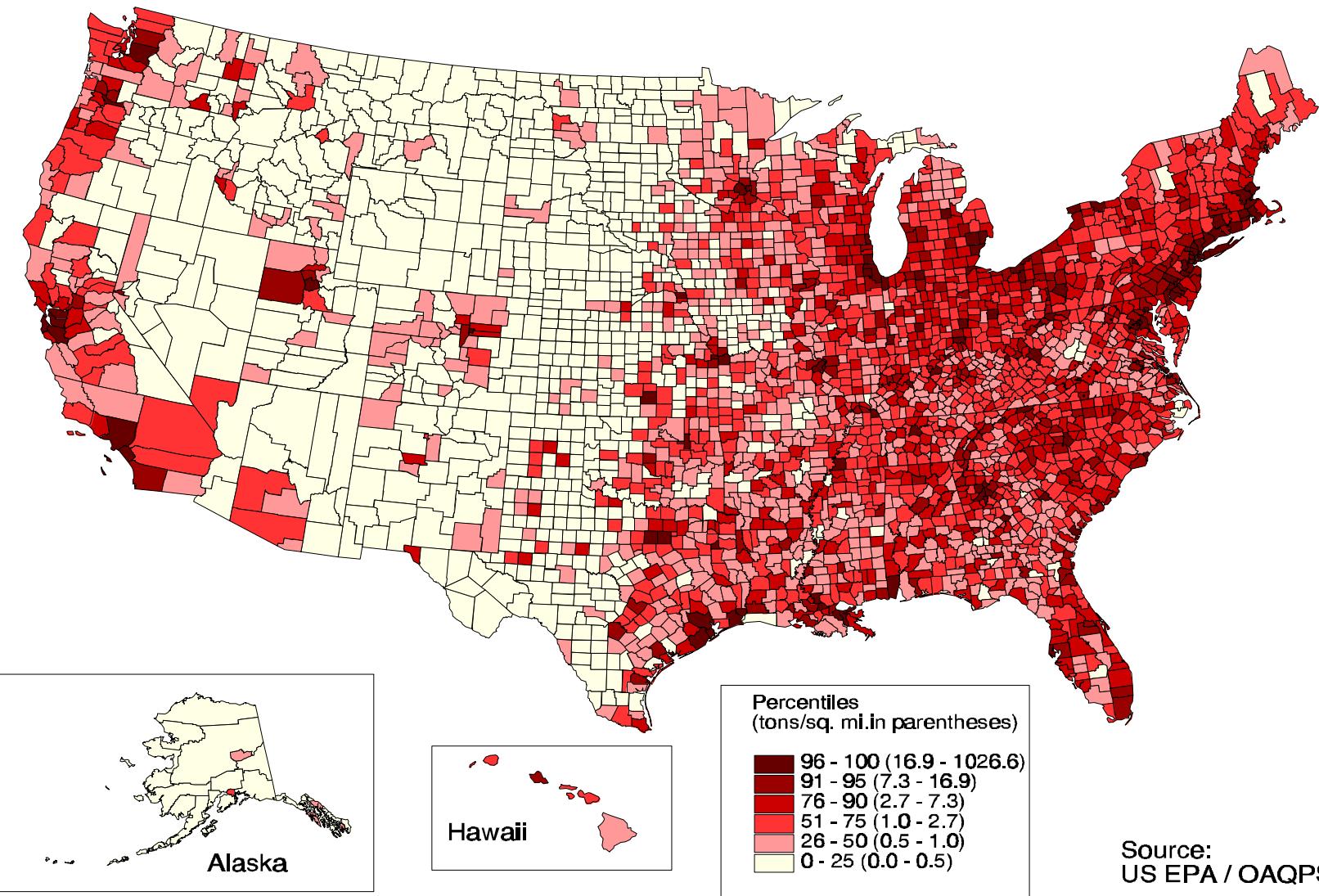
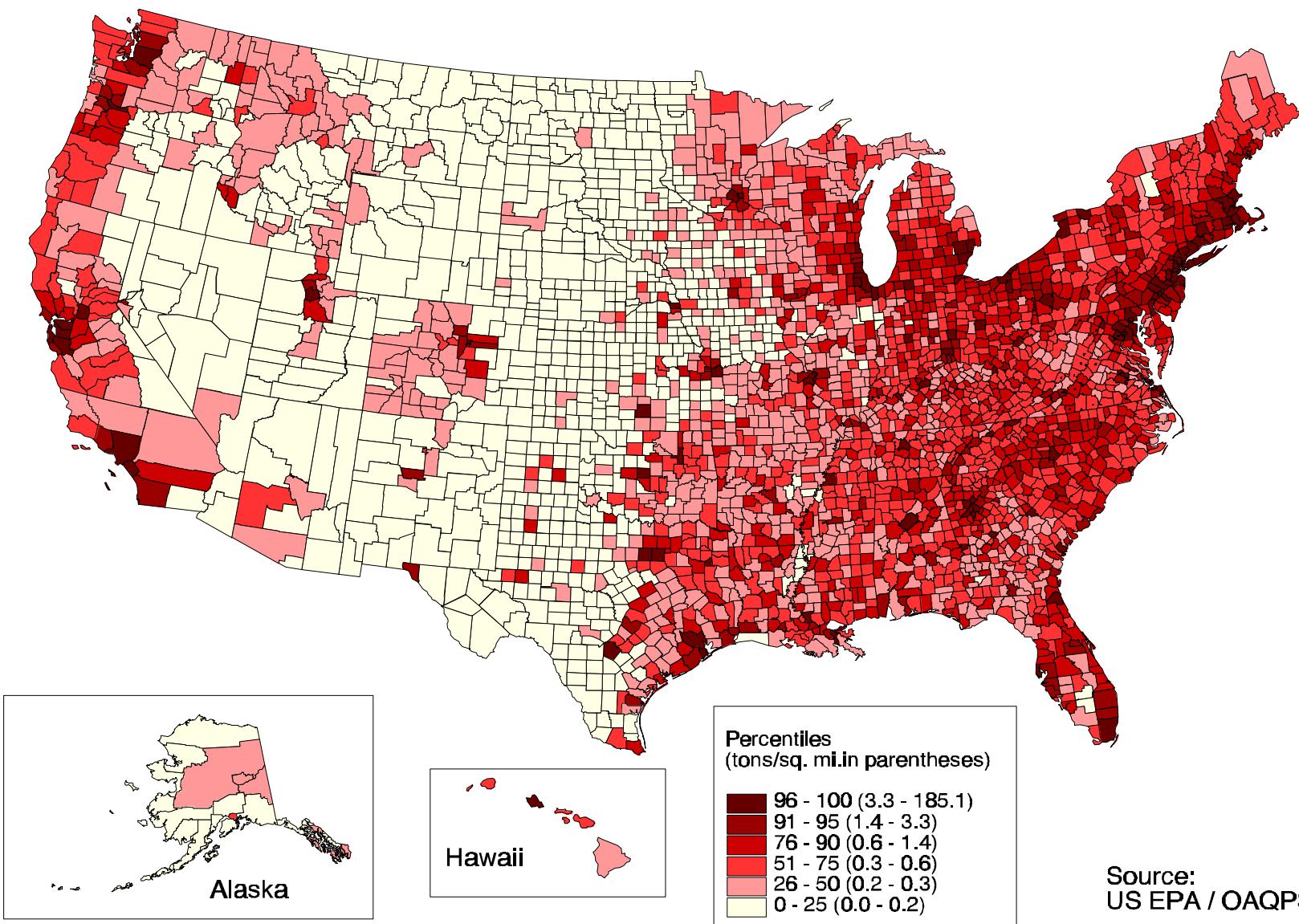
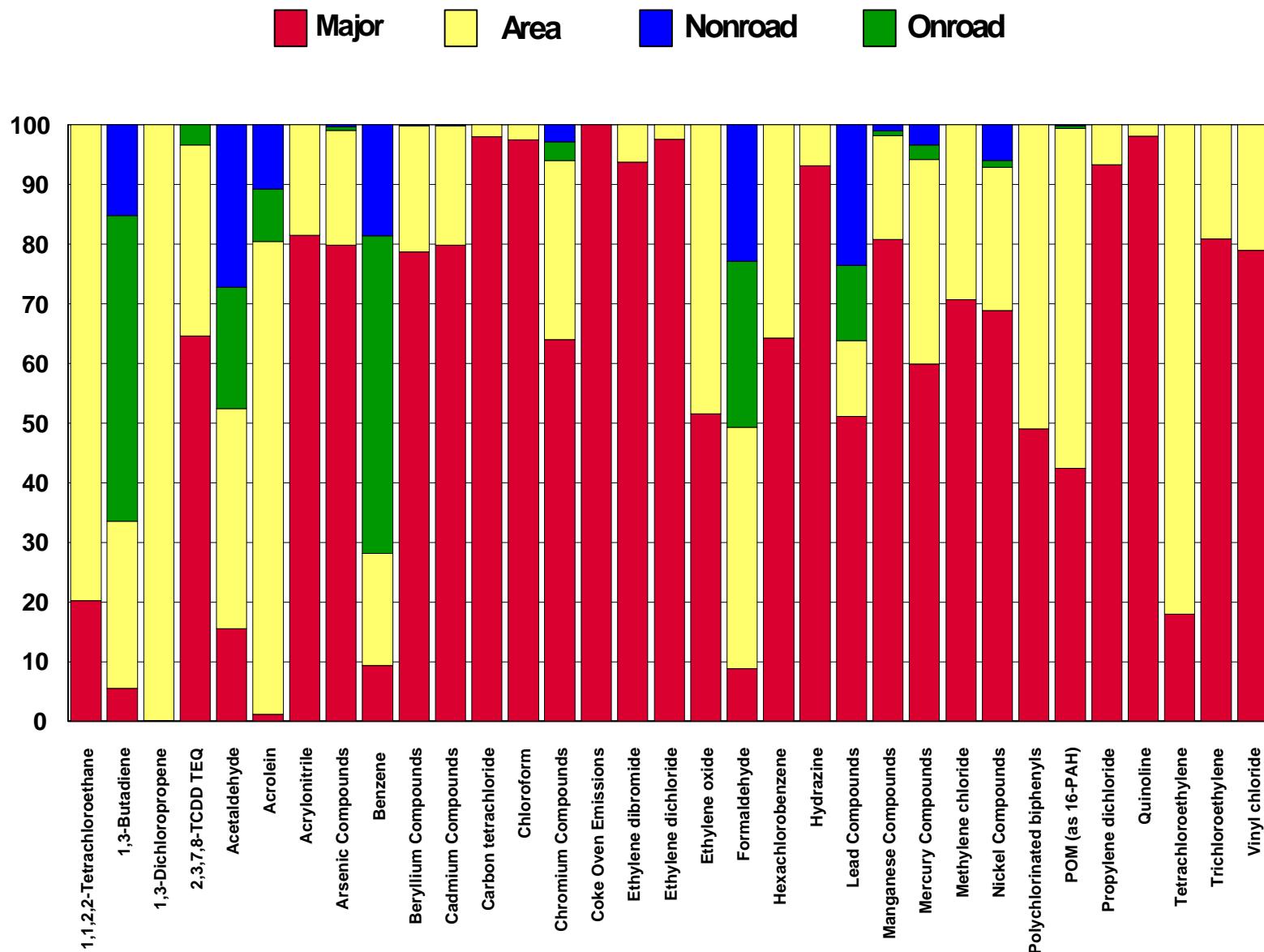


Figure 7-9. Summed Baseline NTI (1990 to 1993) Emissions of 33 HAPs per Square Mile for U.S. Counties



**Figure 7-10. Summary Baseline NTI (1990 to 1993) of 33 HAPs
National Emissions Percentage by Source Sector**



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